STUDIES IN EARLY POTTERY OF THE NEAR EAST

FRANKFORT

Central BAPTIST
THEOLOGICAL SEMINARY

KANSAS CITY, KANSAS

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ROYAL ANTHROPOLOGICAL INSTITUTE.

STUDIES IN EARLY POTTERY OF THE NEAR EAST. II.

Asia, Europe and the Ægean, and their Earliest Interrelations.

BY

DR. H. FRANKFORT, M.A.

[*WITH PLATES I–XIII.*]

OCCASIONAL PAPERS, No. 8.

LONDON:
PUBLISHED BY THE
Royal Anthropological Institute of Great Britain and Ireland.
52, UPPER BEDFORD PLACE, RUSSELL SQUARE, LONDON, W.C.1.

General Agent: FRANCIS EDWARDS, 83A, High Street, Marylebone, W.1.

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As the preparation of the present volume overlapped largely with that of the first, the same scholars to whom I expressed my gratitude in 1923 furthered in some way or other the work for this second part of the "Studies."[1] But besides, I have incurred many fresh obligations. First among these rank my obligations to the British School of Archæology at Athens, which granted me the privilege of its hospitality during the winter of 1924–25. I want to acknowledge here kind assistance received from the Director, Mr. A. M. Woodward, and the many suggestive talks with Mr. W. A. Heurtley, the Assistant Director, who organized the exceptionally rich and up-to-date sherd-collection of the School, which is now invaluable to the student of Prehellenic Greece. My thanks are further due to the "Philologisch Studiefonds," in Utrecht, which contributed towards my travels.

I am also greatly indebted to the various excavators, who graciously showed me their finds and were willing to discuss with me the problems they presented: Dr. Carl Blegen, Assistant Director of the American School of Archæology at Athens; Prof. W. Dörpfeld, at Leukas; Dr. G. Welter, at Ægina; Mrs. L. A. Walker-Kosmopoulos, at Corinth; Prof. Miloje M. Vassits, at Belgrade; Prof. P. Montet, at Byblos; Prof. P. Orsi, at Syracuse; Prof. T. Zammit, at La Valette; and Mr. E. Gjerstadt, at Nicosia. Their kindness was only equalled by the courtesy of the Ephors Dr. Kourouniotis, at Athens; Dr. Xanthoudides, at Candia; and Dr. Papadakis, at Thebes who afforded me all the facilities I could wish while working in the Museums under their charge. I want further to acknowledge the help of those who furthered in various ways the actual publication of this volume: Prof. A. W. Bijvanck at Leiden, Prof. V. Gordon Childe, and particularly Mr. H. J. Braunholtz, Honorary Editor of the Royal Anthropological Institute, by whose careful and conscientious revision this paper has profited not a little. Finally my thanks are due to Mr. W. F. J. Knight for having undertaken the laborious task of often putting matters right wherever I had failed to do justice to his mother-tongue.

Athens and London.
1924–27.

[1] The unfortunate combination, in the author of the first Part, of excess of conviction with lack of experience has made my too vigorously worded differences of opinion with M. Pottier tend to overshadow the great obligation which I feel towards that eminent scholar. I regretfully acknowledge the mistake, though M. Pottier has generously overlooked it. As to my criticisms on M. de Morgan's excavation and publication, in which I do not stand alone, they were definitely meant as a challenge in the hope of eliciting further information so badly needed by all of us, and which the explorer alone might have been able to give. It was only afterwards that I learned, to my regret, that an illness, which soon proved fatal, prevented him from further work.

CONTENTS.

PAGE

REFACE iii

ONTENTS v

ST OF PLATES ix

ST OF FIGURES IN TEXT x

HAPTER I.—INTRODUCTION.

¶ 1. ANTHROPOLOGICAL AND HISTORICAL ARCHÆOLOGY . . . 1
(Historical contact and anthropological parallelism. The Neolithic and the Copper Ages. Alpine and Mediterranean man.)

2. THE COMING OF COPPER 4
(The Copper Age; Asia; Egypt; Greece.)

HAPTER II.—THE ABORIGINAL AND EUROPEAN ELEMENTS IN GREECE.

¶ 3. THE ELEMENT OF CONTINUITY IN GREECE 11
(The earliest civilization in Thessaly and in Central Greece.)

4. THE NORTHERN NEIGHBOURS: THE CIVILIZATION OF THE BLACK EARTH REGION 14
(Changes in Greece and their possible sources; stylistic analysis of the pottery of the Black Earth Region. Two stages in its continuous development.)

5. THE NORTHERN NEIGHBOURS: THE DANUBIAN REGION . . 24
(General characteristics. Butmir. Painted wares; burnish-decoration; knobbed and ribbed wares. Macedonia.)

6. THE MIXED INVASION: TRIPOLJE ELEMENTS 33
(The coming of copper to Europe. Dhimini; Gonia; Thrace.)

7. THE MIXED INVASION: DANUBIAN ELEMENTS 42
(Phocis and Boeotia; the third Thessalian Period. Vinça. Second Danubian wave in Macedonia. The Cyclades.)

8. CRETE IN THE NEOLITHIC PERIOD 53
(Knossos and Phaestos; rippled and incised ware; consequences of Neolithic intercourse.)

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LIST OF ILLUSTRATIONS.

(An asterisk * indicates that the plate contains material not published elsewhere.)

PLATES.

PLATE		FACING PAGE
*I.	Early Pottery from the Black Earth Region : Nos. 1 and 3 after a photograph kindly lent by Mr. V. Gordon Childe ; 2 and 4 after "Führer durch die Vorgeschichtliche Abteilung der Staatlichen Museen in Berlin" ; 5–10 after Trudy, Arch. Sièzda, etc., xiii, pl. xxvi, Nos. 12–15, 30, 31	17
II.	Pottery from the Danubian Region : 1–13 after Fiala, Hoernes und Radimsky, Die neolithische Station Butmir I, pls. v and vii ; 14–16 after Zeitschrift für Ethnologie, 1903, 446, figs. 24 *b*, *d* ; 25	32
*III.	Pottery from Central Greece and Thrace : 1, 2, 4 from Tiryns, by the courtesy of Professor Kurt Müller ; 3 from Hagia Marina, by the courtesy of Dr. Papadakis ; 5–7 from Dikilitash, in the Ashmolean Museum, by the courtesy of Dr. D. G. Hogarth .	37
*IV.	Danubian Pottery from Boeotia and Phocis, in the Museum at Chaeronea, by the courtesy of Dr. Papadakis . . .	44
*V.	Cycladic Pottery in the National Museum at Athens, by the courtesy of Dr. Kourouniotis	51
*VI.	Cycladic Pottery, in the National Museum and (4) in the British School of Archæology at Athens	62
*VII.	Asiatic Pottery : 1. Burnish-decorated bottle from Tell Acharat in the Museum at Beyrout, by the courtesy of M. M. Brossé. 2. Painted bottle in the Museum of Nicosia, by the courtesy of Mr. Einar Gjerstad. 3. Pilgrim bottle from Smyrna, in Archaeologisches Seminar der Universität, Berlin, by the courtesy of Professor F. Noack. 4. Painted jar from Kafer Djerra, in the Museum at Beyrout, by the courtesy of M. Guigues	113
*VIII.	First Siculan Pottery, in the Museum at Syracuse, by the courtesy of Professor P. Orsi	128
*IX.	Early Hittite Pottery from Cappadocia, in the "Antiquarium" at Berlin, by the courtesy of Professor Robert Zahn . . .	145
*X.	Hittite Pottery, in the Antiquarium at Berlin, by the courtesy of Professor Robert Zahn	151

PLATE		FACING PAGE
*XI.	Theriomorphic Hittite Vases, in the Antiquarium at Berlin, by the courtesy of Professor Robert Zahn	154
*XII.	Hititte Pottery: No. 1 after Liverpool Annals, ix; Nos. 2–7 in the Antiquarium at Berlin, by the courtesy of Professor Robert Zahn	160
XIII.	"Hyksos Pottery" from Egypt and Cyprus: 1–7, in the Ashmolean Museum, by the courtesy of Professor Sir Flinders Petrie, Mr. Guy Brunton and Dr. D. G. Hogarth; 8–9 by the courtesy of Mr. Einar Gjerstad	167

FIGURES IN TEXT.

FIG.		PAGE
*1.	Ancient Pueblo vessels from North America, in the National Museum at Athens, by courtesy of Dr. Kourouniotis	2
2.	Index map of Greece	13
3.	Development of design of Transylvanian vase (pl. i, 1), after Dolgozatok, 1911, fig. 39	18
4.	Vases from Erösd, Petreny and Schipenitz, after Dolgozatok, 1911, fig. 36; Journal of the Royal Anthropological Institute, 1923, 273, fig. 17; and *ibidem*, 272, figs. 11, 12	21
5.	Index map of Central and Eastern Europe	23
6.	Pottery from Yama na Dolech, after Mittheilungen der Anthropologischen Gesellschaft, Wien, 1903, 74, fig. 28	28
7.	Pottery from Butmir, after Fiala, Hoernes, Radimsky, Die neolithische Station von Butmir, i, 24, Nos. 40, 41, 42	30
8.	Vase from Kodjadermen, after Bulletin de la Société Archéolog. Bulgare, vi, pl. iv, 3	38
*9.	Burnish-decorated vessel from Drachmani, in the Museum at Chaeronea	43
*10.	Handle from B 3 δ ware, from Northern Thessaly (site 4), in the British School of Archæology at Athens	46
11.	Transylvanian pottery, after Dolgozatok, 1911, figs. 38, 43, 45, 50	48
12.	Pottery from Butmir, after Radimsky, l.c. ii, pl. vii, Nos. 3, 4, 7	49
*13.	Fragment of a "frying-pan" from Drachmani, in the Museum at Chaeronea	52
14.	Index map of Hither Asia	61
15.	Amphoriskoi from Egypt, Palestine and Cyprus, after Scharff, Das Vorgeschichtliche Gräberfeld von Abusir el Melek, pl. xiii, No. 59; Vincent, Jérusalem sous terre, pl. x; British Museum, Catalogue of Greek Vases, i, 2, No. C. 292	77

FIG. PAGE

*16. Early Hittite Pottery, in the Musée Guimet at Paris (*a* and *b*) and in the Antiquarium at Berlin, by the courtesy of Professor A. Moret, Dr. Hackin and Professor Robert Zahn 160

17. Hittite Cup, in the Louvre, after Mémoires de la Société des Antiquaires de France, 1901, fig. 2 163

*18. Cup from Carchemish, in the Museum at Constantinople, by the courtesy of Mr. C. Leonard Woolley 162

19. Hittite Pottery : (*a* and *b*) in the Louvre, after Mémoires de la Délégation en Perse, xiii, figs. 199, 200 ; and (*c*) after Hugo Grothe, Meine Vorderasien Expedition, pl. xviii, 5 164

20. Handle of a Macedonian vase in the British Museum 171

*21. Three vessels from Urmya, in the Vorgeschichtliche Abteilung der Staatlichen Museen in Berlin, by the courtesy of Professor C. Schuchhardt 178

ERRATA ET ADDENDA.

p. 51, n. 1.—*For* "n. 42 *infra*" read "n. 2 *infra*."

p. 150, n. 1, l. 4.—*For* "date de certaines formes nouvelles" *read* "date de certaines formes usuelles."

BIBLIOGRAPHY, p. 195, *add* :

S. R. K. Glanville : Egyptian Theriomorphic Vessels in the British Museum. Journ. of Egypt. Arch., 1926.

H. Hubert : De quelques objets de bronze trouvés à Byblos. Syria, 1925.

INDEX, p. 199 : Copper, at Vinça, 46 ; *add* p. 111, n. 2.

Asia, Europe and the Ægean, and their Earliest Interrelations.

Chapter I.—Introduction.

¶ 1. The recent discoveries in China and India have increased the field and interest of comparative archæology alike. The disclosure of the existence of early Far-Eastern cultures in possession of painted pottery has at once given rise to a multitude of comparisons with almost every kind of painted pottery in the Near East: and thus they may be expected to enter into the scope of these "Studies." They do so, however, only to a limited extent. For if we agree that archæology is that branch of historical science which deals with the material remains of the past, then the aim of an archæological inquiry into the interrelations of early civilizations is an historical aim, and is not concerned, indiscriminately, with *all* similarities which may be detected between them, as we shall presently see.

Anthropological and historical archæology.

Historical facts are not only defined in respect of place and time; they are also dynamic, as forming part of a consecutive development. Thus the interrelations which we want to elucidate can only be *the coming into contact* of separate civilizations, either by conquest, commerce, or migration: *i.e.* by some definite historical event, experienced as such by its contemporaries. Such interrelations become manifest by the intrusive appearance in one civilization of features characteristic of the other.

An entirely different case is presented by the *static* analogies existing between independent cultures, the bearers of which descend from a common parent stock. The common racial origin antedates in most cases the possession of any materially traceable culture; it, therefore, does not only fall entirely outside the scope of archæology, but the similarities of the later civilizations rooted in such racial relationship may, obviously, appear independently at some time or other, and exist independently in their respective cultures, without any historical contact ever having taken place. Naturally, these similarities may, if treated with the necessary strictness of method, yield valuable results to anthropology; but the preceding remarks make it clear how detrimental to knowledge and understanding it would be to express these anthropological results in terms of history or historical archæology, *i.e.* terms by which a *consecutive* development is chronologically fixed.

If, for instance, we find in Transcaspia, Southern Mesopotamia, Cappadocia, and Mainland-Greece painted pottery used, which differs thoroughly in technique but which possesses in common a stylistic principle, viz., the tectonic grouping of

simple geometric designs, then we may *perhaps* accept the anthropological conclusion, that the populations of these widely separated regions were racially connected, and that this primordial relationship became, *inter alia*, manifest in the style of their vase-painting.[1] It would, however, be a grave methodological mistake to derive from the primitive character of some of these wares as compared with others the *historical* conclusion that the latter were developed out of the first, or that the first were a late degradation of the latter; for all we know, these regions may never

[1] It can never be stressed too much that the utmost care is needed in interpreting the simple ornaments with which in most cases the primitive pot-painter operates, and the similarities of which are very often due to convergent development from entirely different starting-points (see Part I, ¶ 13); therefore, in every case it should be inquired, first of all, whether a given ornament can be derived from an earlier one known in the same localities. Too often system-building *theoretici* neglect the objective facts of stratification. More important than the similarities of simple isolated designs is their "syntax," to use an expression of Professor Hubert Schmidt, but that there is even then a danger of building weighty theories on merely accidental likenesses is shown by the Pueblo pots published herewith (fig. 1). They are hand-made and decorated with dark paint on a thick white slip. The first shows the tectonic arrangement of Chaeronea ware; the second shows a "Thessalian" ornament on a "Cycladic duck" vase; the third

FIG. 1.—Ancient Pueblo Vessels. North America.

recalls Central European meander patterns, or those found at Anau III. Other Pueblo pottery shows in an astounding way parallels to such specialized decorative schemes as appear on some Thracian covers for pyxides (cf. W. H. Holmes, *Pottery of the Ancient Pueblos*, figs. 291 and 293, in 4th Ann. Rep. Bur. Eth.) or the mixture of spirals and rectilinear designs of the Dhimini-ware (cf. Holmes, loc. cit., fig. 290), while other vessels again show spiral-belts and its derivatives (Holmes, loc. cit., fig. 30), even round knobs such as Petreny has (Holmes, loc. cit., fig 336). It might, however, prove very tempting to many anthropological archæologists to connect N. America with South-eastern Europe on the strength of these pots, the more so since Professor Hubert Schmidt (*Zeitschr. f. Ethnol.*, 1924, Heft 5 and 6) has already established the thesis that the earliest civilizations of China and Japan are due to immigrants from North Germany and adjacent countries.

have been in contact with each other and the similarities, if there be any, may have developed independently and at very different periods, and may have had a long history in one region and a short one in another, according to the peculiar circumstances of each case: the analogies will have been caused merely by similar predisposition.[1] The aim and scope of our inquiry into the interrelations of the early Near-Eastern cultures thus being defined, the remarkable fact becomes evident that our research can only start from a very definite moment in the course of events; that moment appears to be the beginning of the Copper Age. Before, in Neolithic times, no interrelations in the sense fixed above are traceable. That does not mean that they did not exist at all; but our information, scanty as it is, shows a complete predominance of local peculiarities in every case. It is as if the newly established connection between man and soil, manifest in the beginnings of agriculture and house-building which so strongly demarcate the Neolithic Age from the Paleolithic times of hunters and fruit-gatherers, is striving for expression; it seems as if this "sedentariness" is exalted and developed in all its consequences, so that a differentiation according to locality prevailed with a rigidity perhaps never equalled afterwards.[2]

This specialization makes it difficult to recognize the larger units, to which the different Neolithic civilizations belonged, on the strength of their origin and affinities. Attempts to define such larger groupings pertain, however, to anthropological archæology. If, for instance, we find that in Egypt, Palestine, and Syria the earliest pottery is markedly skeuomorphic, and that, whenever natural objects are pictured, their style betrays a naturalistic mentality[3]; and if, again, in Central and Eastern Europe we find a curious pottery, ornamented with ribbon-like spirals, which in

[1] Thus it is not justifiable to claim with Professor Hub. Schmidt (*Zeitschr. f. Ethnol.*, 1924, Heft 5 & 6) that Anau I is earlier than Susa I, or with M. Hubert and M. Pottier the opposite; for no proof whatever exists of any contact between the two (see Part I, pp. 76 sqq., and *infra*, Appendix I). Again, Hub. Schmidt's claim of an Asiatic "textilstil" extending westward "auf noch unbekanntem Wege" and eventually reaching Thessaly, is a methodological fallacy, as it expresses in terms of history, *i.e.* in terms of *movement* and *time*, *static* stylistic analogies. The origin and appearance of which can neither be geographically traced nor chronologically fixed.

[2] Material of unquestionable Neolithic date from the region with which we are concerned is scarce. But we may quote Malta, Matrensa and Stentinello in Sicily, Thessaly and Butmir, each exponents of Neolithic pottery for which till now not a single close analogy has been found elsewhere. And in Thessaly itself the pottery of one single class of ware (A 3) differs so greatly from site to site that experienced explorers like Messrs. Wace and Thompson are able to separate sherds of imported vessels which were manufactured on neighbouring sites from the local products of the same class (*Preh. Thessaly*, p. 241).

[3] The mentality of those who produce a naturalistic representation of natural objects (see Part I, p. 18) has, in common with those using skeuomorphic ornaments, a certain lack of the power of abstraction, a clinging to the actual concrete objects of the outer world: a pronounced *Realism*. We find, on the contrary, an almost complete absence of skeuomorphic designs in the "Highland-zone," where abstract representations of natural objects are found.

a later stage are sometimes vivified so as to resemble animals or plants;[1] whil on the other hand, in the "Highland-zone" stretching from Armenia westwar across the Hellespont into Europe, we find, in different regions and at differer periods, a pottery with tectonic ornamentation, consisting of simple geometri two-dimensional (ribbon-like) designs without many traces of a skeuomorphi origin, and revealing, when natural objects are represented, an abstract mentality then, perhaps, we may combine these observations with the results of anthropometry and venture on the supposition that the last-described stylistic peculiarities ar correlated with the distribution of "Alpine Man," and that "Mediterranean Man is distinguished by the realism on the north and south of this wedge-shaped highland zone.[3] Such speculations, however, and consequently the period which admits c them, fall outside the scope of our research. But with the coming of copper th situation is fundamentally changed; and it is with that important event that w have therefore, first of all, to deal.

The coming of copper.

¶ 2. In the complexity of our modern society it is impossible to imagine hov momentous a fact the coming of copper was to the ancient world. Whenever we ar able to compare the periods before and after the metal had come into common use we notice such astounding cultural and political changes that neither the transitior from copper to bronze nor that from bronze to iron provides an adequate parallel and we have to look to the beginning of the last century to find, in the revolution caused by the utilization of steam, anything comparable with that older extension o man's power over nature. In Asia we have no remains of any importance from the Stone Age; and this fact is significant; for even if one has to be loth, in archæology to use *argumenta ex silentio*, it looks very much as if the Stone-Age people possessed no civilization substantial enough to leave any trace; and thus the coming of copper there would certainly mean the beginning of a new era. And both Egypt and Greece start their historical development only with the advent of metal. For in Greece linked till then even as far as Crete with the inert mass of Neolithic Europe, the mightiest factor in its brilliant career, the sea, asserts itself only with the advent o copper—never to lose its importance henceforward. And in Egypt the beginning o

[1] Here we have no right to speak of Naturalism, but there is certainly a manifestation o *Realism* in the preference for substantial, almost concrete, ribbon-like designs to more abstrac linear ornaments, as well as in the tendency to elaborate the fortuitous likenesses to natura forms,—likenesses which geometric designs, especially in their degraded renderings, suggest This is often done in the *later* stages of the Tripolje culture (see below, p. 23, n. 1).

On the fact that the abstract rendering of animals on the Susa pottery can never be explained in this way see Part I, p. 31, n. 2, and p. 16, n. 2.

[2] See p. 3, n. 3.

[3] The bearers of the Tripolje culture were dolichocephalic, according to the measurements o the skulls from Chvojka's *areas* and from the Galician sites (see Demetrykiewicz, *Die Oesterr. Ungar. Monarchie in Wort und Bild*, Band 9, 1898, pp. 118–19).

he Copper Age just precedes what the Egyptians themselves considered the very origin f their national existence : the unification of the country under the 1st dynasty.

Now the term Copper Age ought to be simple enough not to be ambiguous ; nd it should, therefore, not be used when only some metal is found among early emains. For it is obvious that the ubiquitous occurrence of metal-ores on the surface nade it unavoidable that, now and again, all over the world, the ashes of a campfire or of a domestic hearth would contain some reduced metal[1]—little glittering lumps, vhich certainly would attract the attention of those whose childish eagerness was nly too delighted to add the bright things to their collection of strange pebbles, hells, and other propitious objects. We know such collections in the form of neck-aces from predynastic Egypt, for instance. And there also we find beads of hammered ron and copper strung with others of gold and carnelian.[2] Even the stone-user night, guided perhaps by some accidental resemblance of the little lumps of solidified netal to some tool or other, have recourse to the typical Stone-Age technique of ammering and so produce some tiny tool or copper instrument. Such sporadic ' utilizations " of metal need not by any means be the heralds of an incipient Copper Age ; their character may be purely incidental ; it may, on the other hand, e nothing less than epoch-making. *" Copper Age."*

For if the term Copper Age is to have any force at all, it must indicate a period n which tools and weapons are generally made of copper. And at the beginning of such a period must needs stand a discovery, which, though probably based on the campfire experiment, is of a far larger scope, a much more complicated nature ; he ore must not only be reduced, but the metal must further be re-melted, then cast, and eventually hammer-finished—all simple manipulations, perhaps, but manipu-ations which had to be discovered.[3] The discovery of this technique, moreover may remain without consequence, when it is not accompanied by the realization of he particular quality which gives the new material its superiority, namely the ability o assume almost any shape wanted by the craftsman. Unless this new possibility s made use of, the copper implements are hardly preferable to the old-established tone ones, whose cutting edge keeps its sharpness so much longer. But the refractory

[1] *Journal of the Royal Anthrop. Inst.*, 1912, pp. 220, 244. The whole of this study of Prof. Gowland, " The Metals of Antiquity " (pp. 235 sqq.), is of the greatest value for the problems discussed in this paragraph. See also " Guide to the Antiquities of the Bronze Age in the British Museum, p. 2."

[2] See Mr. Wainwright's exhaustive study in Petrie, *The Labyrinth, Gerzeh and Mazghuneh*, pp. 15–19. Copper beads, for instance, were found at Naga ed-Deir (Reisner, *Naga ed-Deir*, , p. 118).

[3] How definitely a discovery has to be made becomes clear from what happened in the Lake Superior district (Michigan). Nowhere in the world is native copper found in such huge quantities. But the ancient natives never passed their Stone Age ; they used the metallic copper as they did stones, knocking off lumps which were then hammered into some sort of shape. They never melted it at all : " Though users of metal, they never were metallurgists." For references see first note.

stone admits only a limited series of shapes; copper, however, will hamper man's inventiveness incomparably less in producing tools or weapons whose forms are rationally based on the function which they are intended to perform. Thus much greater efficiency can be obtained, and the way is opened up for that differentiation of means which marks the evolution of civilization throughout its history. It should never be forgotten, therefore, that at the beginning of the Copper Age stands not only the discovery of metallurgy, but also the subsequent discovery of the independence of form and material in the metallic medium; and only the second gives practical value to the first.[1]

If, then, we examine our material in the light of these theoretical considerations, we find, indeed, that the Copper Age is throughout the Near East a clearly defined and entirely coherent period, the beginning of which is marked by changes of the highest importance.

In Asia. In the case of Asia, as we have seen, this conclusion is forced upon us by the very fact that the Stone Age left no trace of any importance. In Syria and Palestine a large quantity of flint implements is found, and a certain group of early remains is generally styled Neolithic.[2] The flints, however, prove little, as copper was certainly not always available in sufficient quantities to meet the demand for the innumerable little instruments wanted in the course of daily life. Almost everywhere we find flints in use along with metal; and in Palestine, whenever their distribution is inquired into, they appear to be considerably more numerous in what, by common consent, is an age of metals than in the so-called Neolithic Period.[3] The absence of copper, on the other hand, is also a very uncertain criterion, unless a site has yielded a rich harvest of other remains; for in any case one is less likely to find metal because it can always be melted again and thus keeps a certain value through all time, and is neither easily abandoned by its original owners, nor neglected by occasional finders. In Palestine its absence may in many cases be explained by the poorness of the country, which, too much out of the way for through traffic, and not in possession of anything worth exchanging for the metal it did not produce, lagged behind, while all round great progress was made. Certainly no sufficient evidence has been adduced to prove that any group of remains belongs to the Neolithic Age; and the same is true for

[1] No more striking proof of the importance of this second discovery can there be than the transition from copper to bronze; for hammered copper, especially copper with a slight admixture of arsenic such as will easily result from natural impurities, is decidedly harder than bronze. But copper is not easy to cast, and, in fact, can only be cast in open moulds, which, obviously, implies the production of more or less simple shapes. Thus the softer bronze, which could be cast in shapes which were more independent of the material, supplanted copper completely once it was discovered.

[2] See the extensive study of Karge in *Rephaim, Die vorgeschichtliche Kultur Palästinas und Phœniziens* (excavation results, pp. 200–216). Also, Macalister, *A History of Civilization in Palestine*, pp. 12–26.

[3] See the table in Macalister, *The Excavation of Gezer*, ii, p. 127. Also ibid., p. 33.

North Syria, where we have nothing but *one* narrow trial-trench at Sakjegeuzi to judge by.[1]

But wherever excavations of any extent are carried out in Asia, the earliest layers not only contain metal, but the originality of the shapes of these earliest copper implements proves that we are already entitled to speak definitely of a Copper Age. This is the case in the first settlement at Hissarlik,[2] and in the necropolis of Yortan-Kelembo,[3] closely related to Hissarlik I. It also holds good for the first settlement at Anau in Turkestan.[4] And southward, we find the same in the earliest town at Susa; in the necropolis outside the town-wall occur simple but rationally shaped copper axes, straight-sided, flat, and with a slightly spreading cutting edge[5]; there are also needles, chisels, and even mirrors.[6] This extensive use of copper is highly remarkable if we realize that the inhabitants of Susa I and their descendants in Mesopotamia flourished before the earliest Sumerians of whom we know[7]; and it becomes more important still when we recall that in Egypt the Copper Age only begins at this latter period, in fact, in late predynastic times, which, as we shall see, are roughly contemporaneous with Susa II and the earliest historically fixed Sumerians.

In Egypt.

It is true that in Egypt copper objects are found at an earlier date; in graves of the early and middle predynastic period occur, sporadically, pins and other small

[1] *Liverpool Annals*, i, pp. 97 sqq. M. Dussaud has found indirect evidence which is thought to show that the earliest remains belong to the Copper Age (*Revue de l'école d'Anthrop. de Paris*, 1909, p. 312).

[2] Even Götze, in his very critical account in Dörpfeld, *Troja und Ilion*, i, p. 324, has to admit the copper knives (*Ilion*, ii, pp. 118, 119), though *a priori* he would like to consider Hissarlik I Neolithic. Exactly the same type of knife is found in the so-called "Tumulus of Protesilaos" (Schliemann, *Troja*, fig. 36), with black ware identical with that of Hissarlik I. The contemporaneous finds at Yortan clinch the matter entirely. It should not be forgotten either that Hissarlik II uses *bronze* with 10 per cent. tin; while we shall yet see that the finds in the Cyclades prove the existence of a *Copper* Age in Western Asia. Cf. also the copper finds from Bounarbashi Giöl (*Ann. Brit. School Athens*, xviii, p. 91) with a vessel with vertically pierced lug-handles (ibid., pl. viii, 5), and related to Hissarlik I.

[3] *Comptes Rendus de l'Académie*, 1901, pp. 810 sqq.

[4] Pumpelly, *Explorations in Turkestan*, 1908, i, p. 150, figs. 237–244, pl. 36. The material is scanty, but any imitations of objects in other material are absent; the pins are of a well-developed shape with differentiated head and stem: and the spirals foreshadow a shape typical of the Bronze Age.

[5] These three qualities disprove at once Mr. de Morgan's remark (loc. cit., p. 11) that they probably have stone prototypes. Compare these axes with those from Wisconsin and Aquila on the very instructive plate of Professor Petrie's *Tools and Weapons* (pl. i, Nos. 1–4). Moreover when copper tools and stone implements are found together in the same earliest layer, one has no right to assume that the former were derived from the latter; everywhere stone implements remain in use after the advent of copper and often are actually *influenced* by the shapes of the metallic objects. Finally, the mirrors, needles, and chisels prove the independence of the copper industry of Susa I.

[6] *Mém. de la Délég. en Perse.* xiii, p. 11, figs. 127–132 p. 12, figs. 33, 34, and pl. xliii. Analysis (ibid., p. 162), 98·70 per cent.

[7] Part I of these *Studies*, chap. iv.

implements[1]; also a harpoon,[2] two small knives,[3] and a dagger-blade.[4] All of these are small: and most significantly, *all of them* are shaped on prototypes of bone or stone[5]; are these objects, then, important enough to deny to pre-dynastic Egypt, with its unique and wonderful production of flint implements, a Neolithic Age? Do they even entitle us to say that the Copper Age is just starting at the time when they first appear? It seems to me that such interpretations are too superficial to do justice to the actual course of events; and a deeper analysis of the facts indeed is wanted.

We can hardly decide whether the Egyptians prior to the late predynastic period knew how to reduce copper ores. The early implements enumerated above are small enough to admit the hypothesis that their metal was obtained purely accidentally by a mere chance reduction, and subsequently hammered into the usual forms. But of course we cannot prove this view, and it may be that ores were purposely reduced. The rarity of copper implements would then not be due to the fact that the Egyptians of the early and predynastic period did not possess the necessary metallurgical knowledge, but simply to the uselessness of that knowledge as long as they thought only of imitating the traditional bone and stone tools, and did not grasp the possibility of creating new forms of higher efficiency. Obviously the second discovery of which we spoke above was still to be made. And unless it was made the few copper objects were doomed to remain as completely without consequence as the iron beads found at Gerzeh failed to bring about the Iron Age.

Now in the late predynastic period there is a very sudden and noticeable change: at about S.D. 60–63 we find a sudden increase in the number as well as in the size of the copper tools; and this increase steadily continues to approach its zenith under the 1st dynasty.[6] But at the very moment at which the increase first

[1] Petrie, *Prehistoric Egypt*, p. 26. Reisner, *Naga ed-Deir*, i, p. 116.

[2] Petrie, *Naqada*, p. 23, pl. lxv, 7, 8.

[3] Petrie, *Tools and Weapons*, pl. xxi, K1 S.D. 49. Ayrton, *Mahasna*, pl. xix, 5.

[4] MacIver, *El Amrah*, pl. vi.

[5] Petrie, *Prehistoric Egypt*, pp. 25 sqq. Reisner, *Naga ed-Deir*, i, p. 114. MacIver, *El Amrah*, p. 40.

[6] I may add that in my excavations at Abydos for the Egypt Exploration Society, I found in practically *all* the protodynastic graves which were discovered *traces* of copper, though there were few recognizable implements found. Such faint indications are often not observed, though in their totality they may lead to important conclusions. In our case the observation confirms the contrast between the pre- and proto-dynastic periods, and the sudden increase of metal, in some form or other, in the latter period. Professor Reisner's enumeration is illuminating: *Naga ed-Deir*, i, p. 127, sub. 3. He may well claim to have established the continuity between pre- and protodynastic Egypt. That, nevertheless, foreign influences did have some effect on the course of events we have shown in the first part of these studies (chap. 5), and we must certainly disagree with him when he claims the Copper Age in Egypt as a result of a purely native development.

becomes noticeable there appear all of a sudden quite new shapes as well which are for the first time real metal shapes.[1] Here then, evidently, starts the Copper Age, in the sense in which we have learned above to understand it. The increased number and the independent shapes show that, here again, it followed the deeper insight into the nature of the new material. But we cannot pretend that this deeper insight was won by the Egyptians themselves, and that the second discovery was made in Egypt. For it is unreasonable, and in fact impossible, to consider as a mere coincidence the fact that exactly at the time when the Copper Age begins, there also appear for the first time definite signs of intercourse between Egypt and Asia, where as we have seen, the Copper Age prevailed already at a much earlier date.

At S.D. 63 the monuments show us the foreign ships which I have shown elsewhere to be connected with Mesopotamia[2]; at the same date we find traces of Sumerian influence on Egyptian art[3]; somewhat earlier even are, perhaps, to be dated the first specimens of that special class of theriomorphic vases, which are probably of North Syrian origin.[4] As the Copper Age, beginning about S.D. 60–63, gradually increases in importance till its full bloom is reached under the 1st dynasty, so the Asiatic connections become more and more apparent till under the first dynastic kings its influence is greater than ever. Then national life in Egypt resumes its course, purging itself of the foreign elements, which it considers alien to its own nature, but enriched by such as agree with and have become inseparable from Egyptian civilization itself. First among the latter ranks, naturally, the use of copper due to an Asiatic impulse received in protodynastic times. We shall later on find an opportunity to locate more definitely the probable centre from which the Copper Age spread.[5]

It must be noted that Greece also enters the Copper Age as a consequence of contact with Asia. But there the events are very different from those we observed

[1] As to new forms at S.D. 63, we get:—*Daggers* with rivet-holes and central ribs; *El Amrah*, pl. x, 5 (S.D. 61–2); and hardly a flint-form at all, though naturally old forms sometimes did survive (*Mahasna*, pls. xx and xix); *Naqada*, pl. lxv, 3 (see Petrie, *Prehist. Egypt*, p. 25); this shape is rather of Asiatic than of Cypriote origin. *Axes:* Perhaps Reisner, *Arch. Survey of Nubia*, pl. 65, *b* 9, about S.D. 63, numerous from the Ist dynasty onwards: Petrie. *Preh. Egypt*, p. 26. A curious instance is the sculptured stone vase fragment in Berlin (Schaefer, *Von Aeg. Kunst*, pl. iii, 3). A long-haired warrior wearing only the pudendal sheath wields a scolloped battle-axe, of a type only found in Egypt in the XIIth dynasty, though once pictured in the Vth (Petrie, *Tools and Weapons*, p. 5). A copper specimen was actually found at Jericho (Sellin and Watzinger, *Jericho*, p. 118, abb. 115). The Berlin vase fragment is by its style dated to about S.D. 63: it shows all the characteristics (sub. 1–5) by which M. Bénédite distinguished the human figures of the earlier group of monuments of this date (*e.g.* the Gebel el-Arak knife), from the later group belonging to the Ist dynasty (*Mon. Piot*, xxv, pp. 20 sqq.). The type of axe is certainly of Asiatic origin. See also Part I of these "Studies," p. 117.

[2] Frankfort, "Studies," I, ¶ 51.

[3] Ibid., ¶ 47.

[4] Ibid., ¶ 44.

[5] *Vide infra*, ¶ 20.

in Egypt. For while in Egypt a foreign current joins the great stream of native development in its course, in Greece a tidal wave sweeps over the country, and, where the self-contained inland life of Neolithic Europe had held its sway, the movement from beyond the sea breaks in and throws the country open on all sides to travel and trade; and though there is not yet *Hellas*—we recognize *Greece.*

Chapter II.—The Aboriginal and European Elements in Greece.

The racial continuity in Pre-Mycenean Greece.

¶ 3. We are fortunate in possessing information about what preceded, in Greece, the period with which we are more particularly concerned: the earliest civilization there is Neolithic. In Thessaly, where the large undulating plains provided unrivalled opportunities for the development of agricultural and pastoral communities, we find two kinds of pottery typical of the earliest strata: a monochrome red-ware, A1, and a ware decorated with red designs on a white slip, A3.[1] The monochrome ware shows in some instances signs of imperfect firing, viz., yellow or even grey hues.[2] The latter predominate near Corinth, as the important and very careful excavations of Mrs. L. A. Walker–Kosmopoulos have shown. At Rakhmani there were stratigraphical reasons for incorporating a primitive black carboniferous ware in the First Period. This ware, A5 α, is by no means confined to Rakhmani as is generally thought[3]; in the British School of Archæology at Athens there are fragments of this class from Rakhmani, Mesiani Maghula (N. Thessaly), Vaitsimylos (Eastern Thessaly), Dhimini, Tsangli and Irini (Central Thessaly); in Leukas it occurs with the characteristic large flat knob in black of Thessalian A1 ware.[4] Then it is necessary also to account for class A5 β, where brown designs appear on black polished carboniferous pottery. And so one has to keep in mind the possibility that the monochrome Thessalian ware is derived from a black carboniferous fabric.[5] We shall have to refer to this matter later on. The red on white wares are also found near Corinth[6] and at Tiryns (Pl. III, 1)[7]; on the other hand, they also occur as

[1] These indications refer to the classification introduced by Tsountas and elaborated by Wace and Thomson in their *Prehistoric Thessaly*. Now and again one meets the remark that the shapes of this monochrome (A1) ware suggest metal shapes; but, although the sharp-edged profiles are not natural to wheel-made pottery, where the "throwing" of the vase is one continuous action, they come naturally in hand-made fabrics, when the potter builds up his vessel out of different parts. Again, the pastels of clay, pasted on here and there, more often than not occur in places where one would *not* expect the appearance of rivets in metal vases at all.

[2] I picked up some sherds of this "rainbow" ware, as it is adequately styled by Mrs. Walker-Kosmopoulos, on the mound at Chaeronea; specimens from Thessaly are in the British Museum.

[3] Wace and Thompson, *loc. cit.*, 15, 28.

[4] *Zeitschr. f. Ethnol.*, 1912, p. 857, fig. 10.

[5] For the transition from black- to red- ware production, see Part I of these *Studies*, pp. 8–11, and *infra*, pp. 63 sqq.

[6] At Gonia, a prehistoric site east of Corinth, discovered by Dr. Blegen, I found an interesting sherd, hand-made with polished red triangles on a polished white slip. Besides this simple type, the cross-hatched designs on a white slip also occur in this region, as Dr. Blegen's and Mrs. Walker-Kosmopoulos' excavations have shown.

[7] *Photo. Deutsch. Arch. Inst.* 15333 from Tiryns, where one sees the triangle with the fine cross-hatching used in Chaeronea, painted on a white ground. Other sherds from that site in the Museum at Nauplia recall the Corinthian "rainbow" ware.

far northwards as the Struma valley in Macedonia[1], and the recent discoveries make it clear that this earliest civilization was not exclusively Thessalian. As it flourished apparently in peaceful isolation, we should not need to deal with it at any length in this enquiry into the interrelations of early civilizations, were it not that in the painted pottery of its Southern region, between the Spercheus valley and the Corinthian plain, some simple features are to be found, which are hardly important in themselves, but persist all through the subsequent troubled times right down to the Middle Helladic Period. They are the representatives, as it were, of that part of the Pre-Mycenæan Greek population which remained throughout the subsequent invasions, ensured continuity, and even seems to have gained predominance from time to time. The actual themes which survive are very simple: broad bands of parallel lines forming a zigzag, groups of lozenges, cross-hatched triangles, in tectonic arrangement, *i.e.* forming belts on the rim, shoulder, or greatest width of the pot. Under ordinary circumstances it would be entirely unjustifiable to use such simple geometric designs as proof of any conclusion whatsoever. Ours, however, is a very special case, for as we shall see this earliest culture is first invaded by northern people, accustomed to designs which do not contain these simple elements but consist of spirals and ribbon-like patterns, chiefly in free-field arrangements; and next by a wave from the East, bringing in undecorated "urfirnis-ware"; under such circumstances we find not only the above-mentioned native geometric designs persisting in such a way that there is an unbroken continuity in the series, but we even find besides the general tectonic principle a very peculiar, decorative scheme maintained as well: the scheme of asymmetry. So we encounter lozenges and triangles outlined with stout lines, but cross-hatched with very fine ones, at Chaeronea, and in the deepest layer of Orchomenos in red-on-white wares, but at Orchomenos also in B 3δ wares, and finally in Ægina and Eleusis in Mattmalerei of the Middle Helladic Period. Broad zigzag bands of parallel lines occur in A3 ware, especially at Lianokladhi[2] and Chaeronea[3], continuing in B3 γ, B3 δ and B3 ζ wares,[4] at Tsangli[5] Chaeronea and Drakhmani,[6] and reappearing in Middle Helladic matt-painted

[1] *Annual Brit. School Athens*, vol. xxiii, pp. 13, 30, pl. iv, 1–5. *Catal. Greek Vases Brit. Museum*, vol. i, p. 1, fig. 26, A88, 1.

[2] *Preh. Thessaly*, fig. 117*k*, 1, 118.

[3] *Ephemeris*, 1908, pl. *a'* in the text.

[4] Sotiriades already explained how these B wares could be developments from A3 (*Athen. Mitteilungen*, 1906, p. 400). His supposition (*ibid.*, p. 401) that the Middle Helladic matt-painted wares had influenced the transition is naturally caused by the defective information at the time of his writing. For Tsangli the gradual transition is acknowledged by Wace and Thompson, *loc. cit.*, p. 244. Mr. Forsdyke, in his new catalogue of the vases in the British Museum, I, i, p. xix, refers to the B wares with which we are here concerned under the headings Monochrome Linear and Linear Three-colour Wares.

[5] *Preh. Thessaly*, fig. 50–54, pl. ii, 4, 5, and iii.

[6] *Ephemeris*, loc. cit., fig. 12, 1.

wares[1]; in the same fashion we find chess-board lozenges in A wares[2] and B wares outside the Dhimini class[3] and in Middle Helladic matt-painted pottery from Phocis,[4] Thisbe, Ægina, Argos[5], and Eleusis.[6] But the principle of asymmetry, too, evident in the different filling of parts of symmetric patterns, as shown in the red-on-white wares from Chaeronea[7], returns on the white patterned "urfirnis" of Hagia Marina and continues on Middle Helladic matt-painted wares.

FIG. 2.—Index Map of Greece.

It is very interesting to note that none of these characteristic motives are found on the highly specialized wares of Thessaly proper, and that neither have they anything to do with the few early red-on-white sherds found in Macedonia. The

[1] *Bull. d. Corresp. Hellén.*, 1906, p. 20. *Blegen, Korakou*, p. 22, fig. 31. Cf. *Preh. Thessaly*, p. 102. Also on "painted yellow Minyan" in the Chaeronea Museum.

[2] *Preh. Thessaly*, fig. 118, 120, 142. *Ephemeris*, loc. cit., fig. 9.

[3] Orchomenos, B3 γ. Drakhmani, B3 ϵ.

[4] *Ephemeris*, 1908, pl. v, 1. There are sherds from pots similar, even to the relief-border round the round-topped chequer field, from Ægina in the museum there and from Thisbe in the museum at Thebes.

[5] *Bull. des Corresp. Hellén.*, 1906, fig. 45.

[6] *Ephemeris*, 1912, p. 16, fig. 7; 7, fig. 9, 7.

[7] *Ephemeris*, 1908, fig. 9; cf. *Preh. Thessaly*, fig. 142 *a*.

examples quoted are, on the contrary, typical of Central Greece,[1] south of the Spercheus valley, and though the red-on-white fabrics of that region are obviously related to the northern A wares,[2] it is significant that it should be their peculiarities which survived in the succeeding centuries. That entitles us to call this element Greek, or anyhow, indigenous, as it is already present in the earliest native civilization which we can trace. May we also call it European? This question we shall answer after having considered the earliest Anatolian pottery, and having made a more detailed stylistic analysis of the pottery of the European neighbours. Then we shall find that the wares of Central Greece which we consider representative of an element of continuity, seem to show some stylistic analogy to the pottery of the "Highland-zone."[3] The wares of Thessaly proper where, on the one hand, the tectonic arrangement of the decoration, which is typical of the latter, is often dissolved, and where on the other some curious designs vaguely suggest vegetable forms can, perhaps, best be understood as a hybrid product. Its curious style has too definite a character of its own, appears too obviously as the result of strong local development, for us to consider it a mixture of two styles, or product of interrelations such as we have defined in the opening paragraph of this volume; it does not fall outside the scope of other Neolithic wares, and thus provides no material for historical, but only for anthropological archæology. But, to anticipate the results of our further inquiry,[4] we may venture, perhaps, on the anthropological conclusion that in Central Greece we have to postulate an Alpine population, racially connected with the "Highland-zone," while in Thessaly such a population was mixed to a certain extent with south-eastern European elements. The element of continuity would then ultimately not be European; but the terms *European* and *Asiatic* are hardly relevant in a period when contrasts and similarities which they suggest were yet to develop.

The northern neighbours.

¶ 4. The idyllic picture presented by the Neolithic Greek civilization is rudely spoilt by new arrivals. Fortified settlements are founded on the hills, the open villages which flourished in the previous period are now often deserted; the new houses show a "megaron" type instead of the customary round or angular huts; new types of pottery appear as well, and also probably copper. But the whole area which we reviewed in the foregoing pages is not all affected in the same way,

[1] As the finds from Chaeronea, Drakhmani and Hagia Marina are still not completely published the references to the few pictured specimens in the foregoing notes must suffice. I can add, however, that the numerous cases with sherds from the sites, stacked in the museum at Chaeronea, contain an almost unlimited number of A ware examples which show the features under discussion.

[2] Compare, *e.g.* the Chaeronea pot, *Ephemeris*, 1908, pl. A in the text, and fig. 5, with *Preh. Thessaly*, fig. 84 *c*, *e*; and also *Ephemeris*, loc. cit., fig. 5, with *Preh. Thessaly*, fig. 84 *h*, from Tsani Maghula, and fig. 37 *r* from Zerelia.

[3] See above, p. 3, and below, ¶ 9.

[4] *Vide infra*: Appendix I.

nor can the new phenomena all be derived from one single source. And thus we have to be particularly careful not to consider *contemporary* innovations of distinct *origin* as differing in *time*.

A survey of the neighbours of chalcolithic Greece ought to enable us to discriminate between the different foreign influences which affected the country; and their affinities should be disclosed not by a crude and haphazard comparison of a few isolated motifs, but by a consistent stylistic analysis of the ceramics concerned. It seems best to inquire, first of all, into the neighbours of Greece on the European side.

The regions actually on the borders of Thessaly offer, as we shall see, problems too complicated to provide any useful basis for our inquiry. But further north we find two cultural provinces with definite characteristics of their own, the "Danubian civilization," stretching from the Dalmatian coastlands straight northwards through Bosnia, Hungary, and Moravia into Bohemia,[1] and the more easterly culture of the "Black Earth Region," comprising Transylvania, Bukowina, Galicia, Bessarabia, and the Ukraine as far as Kiev.[2] The bearers of these two civilizations were agriculturalists, and had several features in common, viz., the shoe-last celt, "Mother-goddess" statuettes, and the use of the spiral for pot-decoration, and perhaps also for body-painting, as the pintadera's would suggest. But each presents such pronounced peculiarities of its own that they certainly should be carefully distinguished as very specialized phenomena sprung from a common root.

The Black Earth Region.

The agriculturalists of the Black Earth Region lived in fortified settlements on hillocks near some stream. Their rectangular houses contained two rooms, not separated by a wall, but only distinguished by a different floor-level, a type found as far north as Grossgartach; some had a sort of pillared porch on one of the short sides, on to which a larger room at a slightly higher level opened, recalling the plan of the Thessalian "megaron."[3]

[1] See Childe, *Dawn of European Civilization*, Map. I, p. 307. I have adopted the nomenclature of Mr. Childe's valuable book.

[2] Ibid., and also his more detailed map in *Journ. Roy. Anthrop. Inst.*, 1923, p. 264.

[3] Childe, *Dawn of European Civilization*, p. 153. The *ploshchadki*, "areas," found in Bessarabia and near Kiev certainly seem to be huts, and not burial-places, as was thought by Chvojka, von Stern, Ebert, and others. See Schuchhardt, *Präh. Zeitschr.*, 1922, pp. 168 sqq., on the houses he found at Černavoda; and for further literature, Childe, *Journ. Roy. Anthrop. Inst.*, 1923, pp. 266 sqq. The clay pedestals in the shape of truncated cones found in Chvojka's culture B (*Zapiski*, loc. cit., fig. 4), and the pyramids of stone of his culture A (*Zapiski*, loc. cit., fig. 3), look just like bases for pillars, such as he found (square and of baked clay) in the areas of culture B and (of wood) in his *semlianki*, "dug-outs" (*Zapiski*, v, figs. 8–13; *Trudi* xi, figs, 62, 63), which by their pottery (*Zapiski*, v., pl. iii) are shown to be closely related to Petreni. These pillars correspond to the stout wooden posts serving as roof-supports in the huts found in Transylvania and Dobrudsha. The only difficulty in explaining the areas as dwelling-places seems to be the absence of hearths (the occasional occurrence of interments being accounted for by Schuchhardt, loc. cit.), but it is not unlikely that they were only used in the summer. Chvojka found very

The pottery is highly remarkable. On the border between the Neolithic and the incipient Metal Age, it still shows much of the regional differentiation typical of the first period, and so the limited material from each of the different sites provides us with small groups consistent in themselves, but all different from each other. The stratification of two sites, Erösd in Transylvania[1] and Cucuteni[2] in Northern Rumania, is known; but the first seems to illustrate only a comparatively short period of the stretch of time during which the civilization of the region as a whole flourished; and the material of the latter, as far as it is published and exhibited suggests that there is a break in the continuity; in other words, that the later material is not the continuation of the earlier from that same site, but of material from another site of the same character and affinities.[3] This is, perhaps, due to the thoroughly European habit of these peasants (in contrast with the Asiatics) of avoiding the ruined remains of previous settlements in founding theirs; thus at Cucuteni the later settlers, as we shall see from the style of their pottery, may have arrived a considerable time after the first settlement had come to an end, and for them the site may have been a fresh one, as it had not been inhabited within living memory; and this habit would also explain why the other sites all cover only a restricted period. But at the same time this circumstance, combined with the regional character of the culture stressed above, complicates our investigation not a little.

As, however, the unity of the civilization of the Black Earth Region is universally admitted and, in fact, beyond any doubt, the only efficient method of dealing with the difficulties is to treat our scattered material as samples out of the general development. If we thus succeed in obtaining a consistent picture of the course of events, and our results, based on stylistic analysis, tally with the objective facts of the stratification as far as these are known, then we may certainly claim to have approached the truth as closely as the present state of our knowledge allows.

The shapes of the earliest vessels from Cucuteni (Pl. I, 2, 4), and Erösd (Pl. I, 1), are already so graceful that we are apt to overlook the fact that they share with very primitive pottery the entire lack of differentiation of structural parts; neither rims

numerous artificial caves in the neighbourhood, and they would certainly provide a protection against the Russian winter. The dug-outs, which, as we shall see, show, by their affinity to Petreni, that they represent a later stage in the development, possess hearths, and may well have been used in summer and winter alike (*Zapiski*, v, fig. 1; *Trudi*, xi, fig. 63). We may well surmise that this population originally dwelt in caves, then built huts near the river for use in summer, and finally dwelling-places fit to be used throughout the year.

[1] *Dolgozatok*, 1911; on the stratification, specially pp. 235 sqq., and p. 185, fig. 5.

[2] *Zeitschr. f. Ethnol.*, 1911. *Archæolog. Anzeiger*, 1923–24, Sp. 349.

[3] I express this view with all due reserve, as the material is still not published; the fact that the remains of the two strata are found intermingled does not disprove our view, as denudation by rains in the intermediate period would afford an explanation. See also below, p. 20, n. 1.

EARLY POTTERY FROM THE BLACK EARTH REGION.

1. Erösd ; 2 and 4. Cucuteni; 3. Oltszem ; 5–10. Government of Kiev. Scale (Nos. 1–4) 1 : 6 ; (Nos. 5–10) 1 : 1

nor bases are accentuated, and only occasionally pierced lug-handles and spreading stand-rings occur. Still, as we shall see in discussing the decoration, this impression of primitiveness may well be caused by a definite, more or less conscious artistic intention. At present we only register the fact, that smooth, roundish shapes predominate: and we actually find the natural correlative of these, the ring-shaped pot-stand, represented[1] (fig. 11, *b*, *c*); now and again it coalesces with the pots.[2] (Pl. I, 1; fig. 11, *a*). These supports had a rather exceptional development in the Black Earth Region, growing into slender stands, often with a cavity near the top, which suggests that coal was kept glowing underneath the supported vessel; then two of these stands are combined and form the curious binocular vases, which are a typical feature of all the sites of this culture.

As graceful as the shapes of these pots is their ornamentation.[3] The basis of this decoration (Pl. I) is the horizontal S spiral, which is originally strewn over the surface

[1] A simple ring-support from Erösd (see *Dolgozatok*, 1911, fig. 43) is found in the burnt layer covering the oldest settlements (ibid., p. 245), from which also come polychrome sherds in the style of Cucuteni I (ibid., figs. 71–2, p. 255), and thus the same date may probably be inferred for the vessel from Oltszem (ibid., fig. 26, *i.e.* our fig. 4, *a*), which has coalesced with its ring-support.

[2] *Dolgozatok*, l.c., figs. 42, 44, 45, 52. *Trudi*, xi, pl. xxvi, 19, 20.

[3] Hubert Schmidt has, I believe, misunderstood the nature of this decoration (*Zeitschr. f. Ethnol.*, 1904, p. 637 sqq.; 1907, 121–136). His assumption is that "in der Vasenmalerei muss *a priori* zunächst dasjenige Gebilde den Anspruch auf die Bedeutung 'Ornament' machen, das der Maler mit Hilfe von Farbe und Pinsel auf die Gefässfläche bringt" (loc. cit., 1907, p. 123). This is true in linear styles, *not* in ribbon-styles, where the design is two-dimensional, and therefore cannot be wholly created by the painter's brush itself, but is enclosed, by his brush work. On this wrong *a priori* assumption are based very forcible explanations of the ribbon-designs of the first style, which are thought to be "weissmalerei"; the white, however, is only a secondary accentuation of the reserved design. Fig. 1, on p. 110, is particularly clear in that respect; three or more parallel white strokes accompany the design framed in black, That the black frame is applied last in order to get a neat outline is a technical trick, which does not in the least affect the stylistic interpretation (cf. Teutsch, in *Zeitschr. f. Ethnol.*, 1907. p. 117). Where the parallel white lines cross and leave a little island of red background, this is again "dyked in" and framed with black. There is no question of a continuous spiral-belt. Just as untenable is the assumption that the Cucuteni pot with reversed colour-scheme (ibid., p. 111, fig. 3) shows running spirals. These running spirals "coalesce at top and bottom with a red background." The designs, however, are the well-defined S spirals (also on the Bulgarian vessel, *Rev. Arch.*, 1901, p. 347, fig. 17) (see also below, p. 41, n. 1). We need not refute in detail the even more forcible interpretation of the other figures, but another criterion is also adduced to prove that this vase-painting developed from "weissmalerei"; the white-painted vases would be of more primitive technique. This conclusion, however, ignores the fact that the pottery from Transylvania is not so homogeneous as that from sites further eastwards and northwards; in fact, in Transylvania we may notice strong influences from the neighbouring Danubian civilization, which uses black carboniferous wares throughout, and as the black wares, therefore, do not belong to the same series of development as the other painted wares of Transylvania, no conclusion as to their relative chronology is justified. Finally the fact remains that in Austria (Palliardi, in *Wiener Praeh, Zeitschr.*, 1904), and perhaps in Transylvania (see above), the stratification shows that the white-painted wares only appear in an advanced stage of the development.

of the pot without any regard to the structure of the latter; it is a typical "free-field" style (Pl. I, 1–4, and figs. 3 and 4, *a*). It is also a typical "Band-Keramik," if one wants to cling to a much misused word; for the designs are not linear but ribbon-like, and thus we find that stretches of the pot's surface, which is treated as an undivided whole, are enclosed by an outline and form a design; the designs are thus essentially *two-dimensional*; areas of surface "dyked in" and reclaimed, as it were, from the amorphous and undifferentiated background. Very often either the background, as a whole, is covered with a coloured wash (Pl. I, 3, 4), or the design is painted in order to heighten the contrast between the two kinds of surface, the part annexed for the design, and the part left untouched.

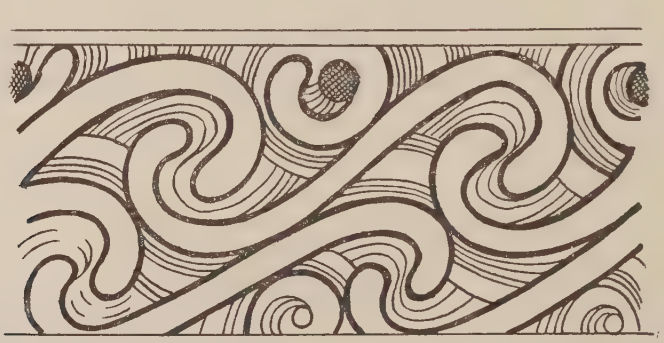


FIG. 3.—Development of design of Pl. I, No. 1.

The artistic principle underlying the decoration is the opposition of one kind of surface to another: the lines have no independent decorative value, but are mere outlines.

But the untouched surface, the background, once opposed to the ornament, became in itself again an object of artistic activity; and thus subsequently the artist's ambition was tempted to organize the uncultivated surface also into beautiful form; in other words, to produce a design which would partition the pot-surface in such a way that the remainder by itself would also form a design. This stage is reached on a beautiful pot of the incised variety of style A from the Government of Kiev (Pl. I, 7),[1] on an equally perfect support from the first settlement of Erösd (Pl. I, 1, and fig. 3),

[1] There can be no doubt that Culture A is older than Culture B, though Chvojka (*Trudi*, xi, 805, 199) and others after him often assert the contrary, because copper is only found with A. If this indeed is not merely due to chance (and the combined evidence from the Ukraine and Bessarabia must make us loth to accept such an "explanation"), further exploration of southern Russia must supply the clue to the riddle, probably to be found in some interference with the intercourse with Asia or the Caucasus, whence, as we shall see, the metal came. The relative date of the cultures A and B is, anyhow, established by a consistent mass of evidence. The painted pottery of A is technically and stylistically related to Cucuteni A (*Trudi*, xi, pl. xxviii, pp. 1–4, 9, 11). The doubtful sherds (ibid., 5–8) correspond to the "transitional," *i.e.* very advanced, A sherds of that site (vide infra, p. 20, n. 1); on the other hand, the B wares of the Ukraine (loc. cit., pl. xxiii) correspond very closely indeed with Petreni, which, again links on

and on a sherd from Priesterhügel.[1] But it is clear that this achievement at the same time changes the character of the decoration fundamentally. The background now being also shaped into design, the former contrast between the " wild " background-surface and " embanked " design surface was lost, and thus the accent fell naturally on the demarcation between the two ; the *lines* from the ribbon-designs evolve, with some transitional hesitations, linear designs : as for instance on the pot figured from Petreni (fig. 4, *b*). But, more important still, the " free-field " character of the decoration is lost as well ; for the attempt to design an ornament which at the same time cuts up the background so that it forms a design by itself, must inevitably take the particular shape of that background into account and thus leads, not to an absolutely independent " free-field," but to a more or less *tectonic* style, *i.e.* one related to the structure of the pot.

Still, the old love for substantial two-dimensional ornament becomes manifest in the scratching of the background, which leaves the design reserved in polished bands as is done in Bulgaria and at Erösd,[2] in the frequent use of groups of parallel lines as a decorative element, *e.g.* in Petreni and Cucuteni II,[3] and in the grouping of the designs in large blocks, ending finally in a definite metope-style (fig. 4, *c*, *d*).[4] The tectonic character of the new style introduces rectilinear elements which tend to predominate.

with Cucuteni II. Here, also, belong the " dug-outs " which possess many features in common with B (clay pedestal and pillars for roof-supports, and similar bone and stone implements ; cf. *Trudi*, loc. cit., p. 768), and have identical pottery (*Zapiski*, v, pl. iii). The incised wares prove the same points : the piriform vessels of A are presupposed, as it were, by the vessels of Petreni, but could never, with their undifferentiated shapes, be later than the latter ; at Cucuteni, moreover, the smooth pear-shaped pot without handles or rim is found in A, and the developed shapes in B. Another incised vessel of Cucuteni A (in Berlin) (*Zeitschr. f. Ethnol.*, 1911, p. 585, right) has its nearest parallel in Culture A of Chvojka (*Trudi*, loc. cit., pl. xxvi, 5), while Cucuteni B, Petreni and Chvojka's B (*Zapiski*, v, pl. vi) have in common a small three-legged vessel, equally exceptional among the finds of the three sites. Thus the sequence of the sites in Ukraine is absolutely fixed by that of Cucuteni, where the settlements were actually found superimposed.

[1] *Zeitschr. f. Ethnol.*, 1907, p. 110, fig. 1.

[2] Particularly at Černavoda (*Praeh. Zeitschr.*, xv, figs. 6–19), but also more towards the south (*Bullet. Soc. Arch. Bulgare*, vi, pl. iv, fig. 3 and passim) and even in Transylvania (*Dolgozatok*, 1911, figs. 60, 62). At Erösd, however, the ribbon-like character of the designs was maintained by yet another means. The designs were bodily lifted out of the surface, and little islands of background thus remained ; these were painted white (loc. cit., figs. 30, 31, 64, coloured in *Arch. Ertesitö*, 1912, Tabla I).

[3] *Trudi*, xiii, 4 ; vi, 2 ; xii, 5. *Journ. Roy. Anthrop. Inst.*, 1923, p. 227, figs. 11, 14, etc. *Zbior*, 1884, Table I, 14 ; 1892, Table II, 2.

[4] *Zbior*, 1884, Table I, 2, 10. *Mitteil. d. Praeh. Komm.*, 1903, figs. 79, 83. See also foregoing note. It should, however, be noted that at all stages of the development, rectilinear designs are found alongside with spirals, even in purely free-field compositions from Cucuteni (Berlin Museum), Erösd (loc. cit., figs. 71–72), Priesterhügel (*Mitteil. d. Praeh. Komm.*, loc. cit., figs. 103, 150). (See Pl. I, 3, and fig. 11, *a*.) They are only perversions of the spiral designs—makeshifts of less gifted or hastily working potters—and afford no indication as to the relative date of the pottery on which they appear.

Thus the acme of the artistic production, *i.e.* a perfect harmony of design-surface and background-surface, leads imperceptibly to a new style, which no longer operates exclusively with two dimensional, but with linear designs, and does not start from one homogeneous surface-field, but accepts guidance from the structural elements of the vessel. The shapes are at the same time elaborated and show definite necks, handles, and base-rings : and these, as also the rim and shoulder, are specially accentuated by the decoration.

After what has been said above about the difficulties resulting from the peculiar character of the settlements, we cannot expect to find the outlined development in its entirety represented on any one site ; neither are we in a position to decide in what period it evolved ; here again there may well have been regional differences, this time also due to influence from the environment. But it is important that we find such stratigraphical evidence as there is in perfect keeping with our view, and that we can account in a consistent way for at least all the main facts. Thus we find in Cucuteni in the deepest layers the pottery, which has provided us with the starting-point for our stylistic analysis. (Pl. I, 2, 4). The higher layers contain pottery which is not only tectonic and linear in its decoration, but of a decidedly debased and " old " character. There seems to be a link missing there[1], but at least it is proved that the style which we claimed to be the final outcome of the development is later in date than that from which we started.

At Erösd Dr. Ferencz Laszlo's excavations have revealed the existence of three superimposed settlements, the youngest of which does not belong to the civilization of the Black Earth Region. The two older settlements, which both perished in

[1] It is rather rash to uphold this view against the contrary opinion of the excavator while the material remains still unpublished, and I only put forward the supposition as an impression based on the material exhibited, and in the hope that the challenge will cause a speedy publication, which will decide the matter. There are besides sherds with rectilinear designs (vide supra, p. 19, n. 4) in a definitely early character, and some others of a more or less transitional character (in Berlin unpublished) ; but certainly these do not differ enough to bridge over the gap which separates them from the entirely different designs of the " second style." In their ornamentation, which shows broad bands of parallel lines, and in their technique, especially in the use of a white slip, they are related to the pottery of the first settlement, of which they form, perhaps, premature modernizations. And the excavator's assertions as to the possibility of establishing a continuous series are, in the absence of published evidence, open to suspicion ; because it seems (*Archaeol. Anz.*, 1923–24, p. 349 ; *Zeitschr. f. Ethnol*, 1924, Heft 5 and 6) that he promotes the use of monochromy or polychromy to the rank of criteria, while they are in reality only secondary peculiarities ; we possess early monochrome vessels from Erösd (*Dolgozatak*, 1911, figs. 9, 39, etc ; see pl. i, 1) and very late polychrome vessels from Cucuteni itself, Petreni (*e.g. Trudi*, xiii ; x, 3), and Galicia (*Journ. of Hellen. Stud.*, 1922, pl. xii*a*). As we have seen, the prevalence of two-dimensional free-field, or more or less tectonic linear designs, is the most important criterion, and according to that, the material exhibited does not show a continuous development (cf. n. 6 above). We can well compare Cucuteni I and II on pl. v of the *Führer durch die Staatl. Museen in Berlin : Vorgeschichtliche Abteilung.* (See also Cucuteni II designs in *Zeitschr. f. Ethnol.*, 1924, p. 6, fig. 5.)

conflagrations, produced such homogeneous remains throughout[1] that the second one is to be considered as a reconstruction of the first. In fact, its pottery runs parallel with that of Cucuteni I, but we can follow its development into a more advanced stage. While in the deepest layers we find the simple and strong contrast of red and white as in Cucuteni (fig. 4, *a*),[2] there soon appears on vessels of highly balanced

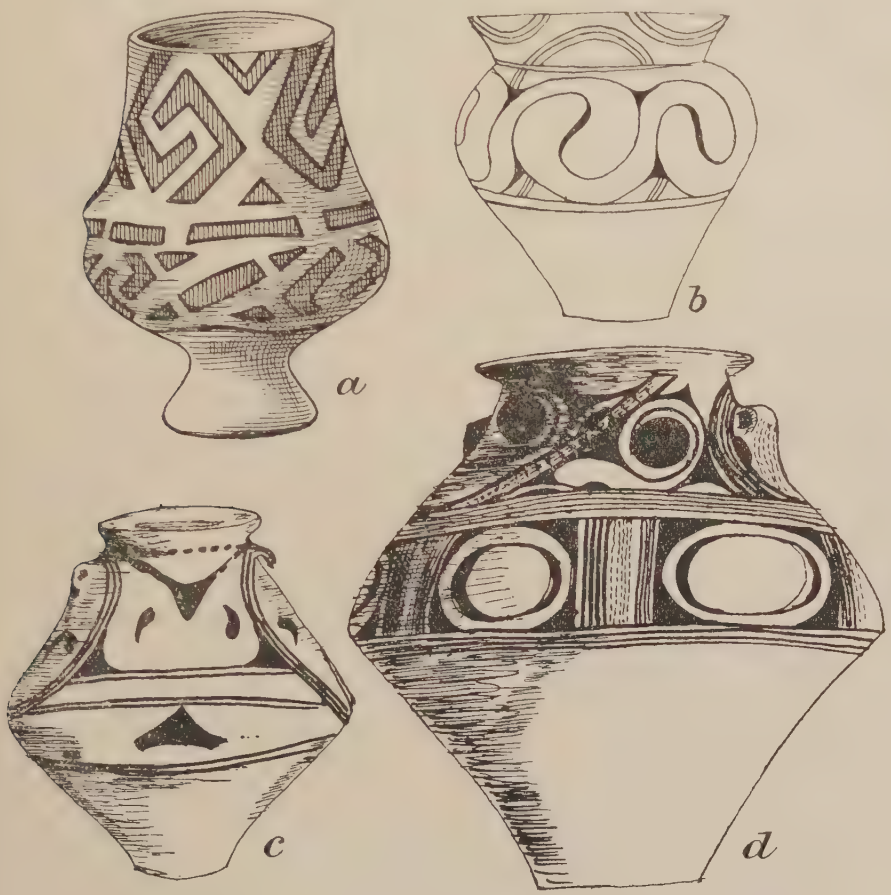


FIG. 4.—Pottery from (*a*) Transylvania; (*b*) Bessarabia; and (*c*, *d*) Galicia.

design the more sophisticated opposition of the outlined S spirals and the background covered with fine white lines[3] (Pl. I, 1). Somewhat later[4] we find tectonic elements to a small extent admitted: a parallel zone is now found in use; and while on the older example the design is applied to the vessel without regard to shape and limitation, so that actually the lower spirals are cut through by the bottom edge

[1] *Dolgozatok*, 1911, p. 259.
[2] Ibid., figs. 71, 72; cf. figs. 73–76 and fig. 36 with n. 7 supra.
[3] Ibid., fig. 9 from the younger, and fig. 39 from the older settlement.
[4] Ibid., figs. 24, 25 from second settlement, from which come also figs. 30, 31.

(fig. 3), on the younger example a related design is adapted to an even horizontal band, enclosed by narrow borders which accentuate rim and bottom. Thus a relation between shape and design is established, but the absolute " free-field " character of the decoration is given up.

This very important transition is particularly clearly exemplified by three pear-shaped vessels from the Ukraine (Pl. I, 7, 5, 10). The first (No. 7) already does not show an absolutely pure " free-field " style : the bottom part is treated as a separate unit ; the top part, a masterly achievement, leaves us in doubt about what is design and what background, though the painted varieties suggest that theoretically one has to consider as design the customary S spiral (black), outlined by bands of incision instead of paint. Still, in practice all is design : the background is entirely exploited.

The second example (No. 5) shows both incised and black spirals coiling round an embossed point ; one might imagine that these points were there first, but the complete absence of bosses on any first-style vase I know makes preferable the conclusion that they were created as fixing-points on the no longer irrelevant surface for the design,[1] which was no longer of the " free-field " type.

The third example (No. 10 ; also No. 6 ; and No. 9 is transitional) finally shows how the newly introduced tectonic principle ousts any " free-field " survival from the decoration ; the bosses remain, and the decoration has fallen into separate units of open space enlivened by small pits on the one hand, and of groups of concentric circles round the bosses on the other.

It may not be superfluous to insist that this development cannot be reversed, and that its direction is guaranteed by the fact that one of the two extremes in the series, the S spiral, is a design which is essentially one and indivisible, conceived in its entirety as it is drawn by one sweep of the brush or the engraver's point. The other extreme, on the contrary, shows the disintegration-products of the spiral ; and we cannot suppose that out of these, where the unity is already dissolved, an organic design like the spiral could " develop."

The incised pottery of Chvojka's culture B shows the disintegration even of this later tectonic style. The painted pottery of his dug-outs, however, is almost identical with that found in Petreni. From this Bessarabian site comes a homogeneous mass of material, showing a masterly application of the S spiral decoration on tectonic principles. In the best specimens we find S spirals arranged round the bosses, which we met in the pear-shaped pots of the Ukraine. Others show the degradation of these designs ; it is also known from Schipenitz, Cucuteni II, and Galicia.

[1] They persist in the later painted wares in Galicia (Childe, *Dawn of European Civilization*, p. 158, 3) and Bessarabia (*Trudi*, xiii, pl. x, 12, 3). It is also impossible to assert that the bosses are degenerate handles, for handles do not appear on the early vases. They definitely belong to a later stage (*Trudi*, xi, pl. xxv, 25, 27, etc.), and then appear beside the bosses (*Trudi*, xiii, pl. x, 3). Von Stern observes, moreover, that the bosses are produced by a definite modelling of the vessel's wall, which is pressed outward, while handles are made separately and added.

If we now once more review the pottery of the Black Earth Region, the fundamental unity underlying all its variety is certainly clear. It flourished chiefly immediately east of the Carpathians; farther east, in the Government of Kiev, its

FIG. 5.—Index Map of Central and Eastern Europe.

degradation was hastened by influences from the surrounding cultures with incised pottery and a poorer sense of beauty.[1] West of the Carpathians only an early stage of the civilization is known, and the later tectonic style is only represented in its

[1] This pottery, extensively treated by Ailo, *Fragen der Russische Steinzeit*, shows by an occasional spiral, impressed by a rope (ibid., fig. 32), influence from the Tripolje culture. Its neighbourhood explains the excess of incised wares near Kiev; painted ware was rare there, and it may be that it was imported from further west, as Chvojka thought, because some of the material used in the manufacture was not found in the neighbourhood. These painted wares go very far in their approach to natural forms, though only rarely (*Zapiski*, v, pl. iii, 2, 5) are these *definitely drawn*. The other approaches to natural objects, which appear here as well as in Bessarabia (*Trudi*, xiii, pl. i, 2, 3; pl. xi, i, 4–8; 12, 13) and Bukowina (*Journ. Roy. Asiat. Soc.*, 1923, figs. 5, 9, 27, 28), seem to be the result of a particularly strong imagination on the part of these eastern pot-painters, who, now and again, summarily accentuated the likeness to animals or human beings which the rather weird products of degraded spiral-designs might suggest to them. The early examples from Kiev vaguely suggest vegetable forms (*Trudi*, xi, pl. xxviii, 1–4, 9, 11), just as relatively more advanced vessels from Galicia do. (*Zbior*, 1891, Tab. IV, 3, 7; V, 6. 1892,

very first beginnings. It seems that there its development was prevented by the intrusion of western influences from the Danubian Region, which we have now to survey.[1]

The Danubian region.

¶ 5. The Danubian region, situated in the heart of Europe, easily accessible not only along the course of its main river but also by means of the valleys of its numerous affluents, naturally offers very complicated problems.[2] Just as its influence is felt far afield, so also many forces from outside may have acted on its growth. We may, therefore, be provisionally satisfied to state that in late Neolithic times a more or less homogeneous civilization stretched from the Istrian coastlands northwards up to Moravia. The type of dwelling of this agricultural population differs in general from the architecture of its eastern neighbours; they possessed irregular oval huts, apsidal, and only sometimes, in the north, rectangular houses.[3] Their pottery is based on an entirely different technique: while the Black Earth Region mainly uses light-coloured wares, testifying to firing in an oxidizing atmosphere, the Danubian region is given to carboniferous fabrics throughout. The greater rainfall, at least in the southern and western part of the region, and the consequent difficulty of obtaining dry fuel and smokeless fires might account for the difference to some extent. But apart from the technique, the style of the decoration differs not a little from that of the eastern culture.

Trustworthy stratigraphical evidence has shown that in Bohemia, Moravia, and Lower Austria, very primitive hemispherical bowls are the earliest vessels.[4] Their incised decoration is mostly based on the horizontal S spiral and its derivatives, which, we believe, descend from an early relative of the ceramics of the Black Earth Region.[5] The subsequent development, however, in each area took divergent

Tab. II, 4, 6; IV, 4; V, 9.) For this origin of natural representations see Hoernes, *Urgeschichte*, pp. 30 sqq., and Part I of these *Studies*, p. 16, n. 2, and for its unjustified application to Susa I, *ibid.*, pp. 22–29 and p. 31, n. 2. As the Galician and Bessarabian specimens quoted above belong to a late stage and demonstrably develop out of earlier East-European wares, they ought not to be "derived" from the pottery of Susa I, which also shows natural representations in simplified forms, executed in a similar colour-scheme; such comparisons, chronologically incorrect, lose sight moreover of the fact, that in Susa we find the gradual development starting from abstract natural representations into geometric designs; in South-eastern Europe disintegrated geometric designs are vivified more or less summarily into natural likenesses.

[1] The material is almost too scanty to justify any conclusion: but tentatively it might be surmised, that the foreign culture which overlies the Tripolje remains at Erösd is Danubian (cf. *Dolgozatak*, loc. cit., fig. 7, with Radimsky, *Butmir*, i, pl. vii, 10, 11), the more so as we find in Tordos the Danubian civilization dominant. (*Vide infra*, p. 29.)

[2] See for these, Childe, *Dawn of European Civilization*, pp. 171–6, and Menghin in Hoernes, *Urgeschichte*, pp. 772 sqq., 783.

[3] Childe, loc. cit., p. 177.

[4] Jaroslav Palliardi, *Die relative Chronologie der jüngeren Steinzeit in Mähren. Wiener Prähist. Zeitschr.*, 1914, pp. 3 sqq.; cf. Jira *in Mannus*, 1911.

[5] *Menghin*, loc. cit., p. 774.

directions, and it is legitimate to suppose that the ethnic elements comprised in either culture were different; for even this earliest pottery from the Upper Danubian region contrasts strongly with the earliest known from the Black Earth Region, in the fact that it is from the very beginning more or less tectonic in character.[1] In all cases the rim is slightly accentuated, and only very few examples show anything like a "free-field" style.[2] The design is most frequently enclosed by two outlines, and is therefore ribbon-like; but, in contrast with the practice in the Black Earth Region, the opposition between design-surface and pot-surface, though it naturally enters into the decorative scheme to some extent,[3] is not made the basic principle of the decoration.

[1] Adama van Scheltema has brilliantly treated the "Spiral-Mæander Keramik" of the Danubian region as the product of an "Ausgleich Zone" where Nordic influences mingle with those from the south-east. (*Die Altnordische kunst*, p. 80–100.) I believe that these connections with the Mediterranean existed only in a later period, when in the south the Copper Age had already begun. Nevertheless, we endorse his view as far as it explains the Danubian spiral decorations as a short-lived synthesis of heterogeneous tendencies, the source of which would be an "Alpine" strain on the one hand, and the indigenous inhabitants of the Central European plains on the other. We shall see further that there is evidence that at least one wave of "Alpine" man entered Europe, in the possession of the requisite knowledge to make carboniferous pottery (vide infra, ¶ 9). If this pottery is ornamented, the decoration is strongly tectonic and rectilinear, unless a foreign element introduced the spiral which seems *in essential* foreign to the artistic mentality of Alpine man. Therefore, the spiral decoration decays without further development wherever it is found in the Danubian area, and one of the strongest proofs of the correctness of Scheltema's view is the consistent explanation which he is able to give of various enigmatic figures produced in the process of disintegration where we see: "wie der gesunde Organismus der eigene Kunst auf die Dauer auf die ihm zugeführten fremden Säfte reagierte." The disintegration of the spiral-decoration would correlate with the absorption by the Alpines of that foreign element; and that, it seems to me, may well have been an indigenous population of the plains and river-valleys of the Danubian region. Menghin (in Hoernes, *Urgeschichte der Bildende Kunst in Europa*, p. 774) supposes that the "Spiralmeander Keramik" descends from a late Paleolithic art, which used meanders, and is found in the Ukraine and Moravia. It is quite feasible that descendants of this culture would, on the one hand, have produced the Tripolje culture with its realistic tendency in decoration (vide supra, p. 4, n. 1 and p. 23, n. 1), and on the other have persisted in the Danubian plains. In the Danubian region these dolichocephalics (vide supra, p. 4, n. 3) would have been absorbed by the Alpines, but their different mentality would have become manifest in the spiral decoration, which curiously enough is everywhere best seen in the *earliest* stages and then decays.

It is worth recalling that Ethnography shows that hand-made pottery is woman's industry (*e.g.* Van Gennep in *Revue d'Ethnographie et Sociologie*, 1911, pp. 277 sqq.), and the common occurrence that the conquerors take the women of the vanquished as wives and slaves would explain much in our case.

[2] Childe, loc. cit., 173: and these prove little, as the free-field examples come from the Rhine-land, where this pottery was intrusive in a later and apparently somewhat debased stage. The decidedly early examples (see Hoernes-Menghin, fig. 777, fig. 9) show tectonic arrangement; the meander runs parallel to the rim, or the rim is underlined by little strokes, or the bulging height of the vessel is marked by zigzag bands.

[3] Where painting is unknown, we find the desired effect achieved by filling the ribbon with small strokes or dots; see Hoernes-Menghin, p. 295, Nos. 1, 2, 6, 8, and in a later stage, *Praeh. Zeitschr.*, ii, pl. xvii, etc.

Spirals.

The greatest achievements of this ceramic art are produced by the development of quite a different principle: the *rhythmic* arrangement of the ribbons in their quality of substantialized *lines*. An early example from Bohemia has actually, or very nearly, given up the ribbon-character, and shows a continuous spiral design which by its continuity accentuates the circumference, and by its up-and-down movement the convexity of the vessel.[1] On the same lines the Danubian ceramics develop wonderfully in the south. Contrary to the habit of the Black Earth Region, where we find the pot-surfaces are covered with essentially two-dimensional, limited, static designs, we find, both in relief and incised at Butmir[2] and near Triest,[3] painted at Lengyel,[4] and incised again at Tordos,[5] and in its neighbourhood (Pl. II) endless belts of continuous spirals, the beauty of which is the *rhythm* of their movement.[6] They usually mark the neck or greatest width with a horizontal line[7]; and though their closely interwoven systems may cover large surfaces evenly, nevertheless their arrangement does not ignore the structure of the vessel. We find not only that the spiral-groups on the neck are separated by a plain band from those on the body, but also that different types are used for different parts, so as to accentuate the structure.[8] Only rarely do we find the old tradition maintained, with incised ribbon-designs differentiated from their background by dotting or hatching (Pl. II, 6, 7, 10).[9] More often it appears in the rectilinear designs which are found here as in the earliest stage of Danubian ceramics alongside with the spirals[10] (Pl. II, 1–4, 13).

Notwithstanding the peculiar beauty of its rhythmic spiral designs, the whole of this Danubian pottery is a rather feeble growth. Most of it remains undecorated, and the short flourishing periods of Butmir and Tordos leave hardly any successors at all. The best pottery was found in the deepest layers. But soon decay sets in, and the promising movement disintegrates into the poor chaotic scribbling which prevails in the higher strata. Even the decoration of the best period has in all

[1] Hoernes, pp. 295–7; Jira, loc. cit., fig. 2.

[2] W. Radimsky, M. Hoernes, F. Fiala, *Die neolithische Station von Butmir* (1895, 1897).

[3] Theresienhöhle near Duino, cf. Hoernes, *Jahrbuch K.K. Zentralkomm.*, iii, pp. 47–8, figs. 117, 120.

[4] M. Wosinsky, *Das Prehistorische Schanzwerk von Lengyel*, xxiii, 175; vi, 8, 10; xi, 52.

[5] *Zeitschr. f. Ethnol.*, 1895, fig. 9, 11; 1903, fig. 24.

[6] For the real character of Tripolje vessels like our fig. 3 which suggest a continuous spiral design, see above, p. 17, n. 3; for a similarly ambiguous Cucuteni design, see below, p. 41, n. 1.

The curious local Bohemian attempts (Jira, loc. cit.) at the painting of spirals which seem to have remained without subsequent development, cannot therefore be adduced to explain (with Schuchhardt, *Alt Europa*, p. 125) any other kind of painted pottery as being derived from the same stylistic ideas.

[7] Radimsky, etc., loc. cit., ii, pl. vi, 3; viii, 5, 8, 9, 14, 18.

[8] Radimsky, etc., loc. cit., ii, pl. viii, 2.

[9] Ibid., i, pl. ii, vi, 6; vii, 1–3, etc. Also in spiral design, ibid., i, pl. v, 1, 7; ii, pl. ix, 19 (cf. Hoernes, p. 20).

[10] *Jahrbuch K.K. Zentralkomm.*, iii, p. 12; the best spirals as well as the best rectilinear designs come from the deepest layers.

probability its origin outside ceramic art; it seems to be derived *en bloc* from embroidery work, in which the population of the Northern Balkans, then as to-day, may have found the most adequate expression for their peculiar artistic ability.[1] There, moreover, their feeling for colour could be satisfied, while the potters were severely handicapped in this respect by the peculiarities of their technique.

Painted pottery.

Painted pottery was not entirely unknown in the Danubian Region, but it never flourished as it did further east. This may have happened not only because the Danubian potter had smaller skill, but also because he had difficulties to overcome which did not exist in the Black Earth Region. There the pottery was fired in an oxidizing atmosphere; consequently the appearance of the pots before and after this essential process was hardly changed.[2] Very different was the case in the Danubian region where mud-coloured pottery entered the kiln, to reappear blackened to the core and coated with a layer of soot, which could be polished to a shiny surface. Colouring before the firing was therefore out of the question, and all the coloured wares were painted after the pot was technically finished; the paint appears as a thick crust on the black polished surface, and the ware is "*crusted* ware."[3] Its practical disadvantage, besides its æsthetic failings, is obvious; no vessel in practical use could retain this weakly adhering crust for any length of time. Thus it need not astonish us that we find thickly crusted polychrome decoration only on the earliest painted wares of the Upper and Middle Danube.[4]

In Moravia and Lower Austria a regional development can be traced.[5] First the firing begins to show an oxidizing effect, and the crusted designs appear on bright red polished vessels. At the same time ornamental knobs, long used to decorate

[1] The origin of some of the spiral systems in embroidery is recognised by Dr. R. Wurz, *Spirale und Volute*, i. An actual garment from Ragusa, reproduced by Riegel (*Stilfragen*, fig. 87), which seems to go back to early classical tradition, unaffected by the subsequent Venetian and Oriental influences, shows similar spirals. The technique of this particular Balkan embroidery is the stitching of designs in coloured cord on the cloth; and when we see that the more complicated systems of pot-decoration like, *e.g.* Radimsky, loc. cit., i, pl. v, 3, 8; *Zeitschr. f. Ethnol.*, 1903, p. 446, fig. 24, can only be understood when we consider the lines as *outlines* traced along coiled-up bands or strings, we might well assume that the women, who as in most primitive communities may have been the pot-makers, imitated their "application" technique on the decoration of their pots, and either applied coils of clay to the pot-surface or, by actually passing their sharp tool along a coiled-up piece of string, *traced* the complicated designs which even we find difficult to imitate.

[2] Theoretically the firing could also have been neutral, but it is hardly probable that the kiln used permitted such a perfect regulation of the draught. It is significant that the black of the Tripolje culture has generally a violet hue in it which would suggest manganese as its base. Hæmatite or other ferric black would indeed turn red in an oxidizing atmosphere.

[3] In Thessaly this kind of ware was thus called by Wace and Thompson. It is Mr. Childe who, in the course of his extensive studies on Eastern European ceramics, extended to them the distinction of crusted and painted wares.

[4] Palliardi, *Wiener Praehist.Zeitschr.*, 1914, pp. 9–10. The spiral designs from Lengyel belong to this class (Wosinsky, loc. cit., pl. xiii, 175; vi, 8, 10; xi, 51).

[5] Palliardi, loc. cit.

otherwise plain vessels, appear in addition to the coloured designs on the same vase.[1] Next, the coloured designs are simplified to rectilinear "Weissmalerei." The white produced with the greatest thinness a maximum degree of density, and was therefore a device superior to the crusted ornament; in fact, these white designs can only be distinguished from ordinary "painted" work by the fact that the white is easily wiped off, which shows that it was applied after firing.

Simple white-painted designs applied to carboniferous pottery after the firing are also found in the southern part of the Danubian region. But it is hardly possible

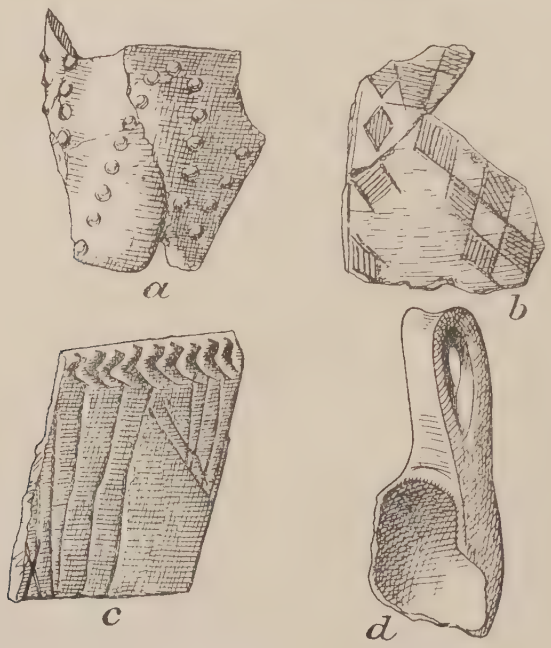


FIG. 6.—Pottery from Yama na Dolech, Istria.

to bring them into direct relation with the Middle Danubian "Weissmalerei." For in the south this technique *antedates* considerably the appearance of polychrome crusted wares intruding from the north, while there, on the contrary, in their homeland these crusted wares antedate the "Weissmalerei."[2] One has therefore either to assume for the south a similar development in a quickened time sequence, or—and this seems more probable—an independent local development, in which the white paint took the place of the incision with white incrustation. The reason

[1] Wosinsky, loc. cit., pl. xiii, 73; xxii, 173; vi, 3. *Arch. Ertesitö*, xxxi, 149, fig. 2; *Wiss. Mitth. aus Bosnien und Herceg.*, 1896, 88, figs. 88–90. For Jordansmühl, see Jira, loc. cit., p. 226; for Butmir: Radimsky, loc. cit., ii, fig. 42. See also below for the peculiar development of this device.

[2] The polychrome crusted wares appear in the Balkan peninsula, as we shall see, at the end of the migrations (so-called Third Thessalian Period); the white-painted designs arrived with the first intruders and overlap in Boeotia with the First Period.

for the innovation is æsthetically quite intelligible, for the white-painted designs are only found on a class of small, fine, thin-walled and highly polished vessels; and an incised decoration, the edges of which would inevitably cause some roughness of the surface, is incompatible with the very aim of the potters producing this particular class of ware. The exact technique of the white painting was here again determined by the production of carboniferous fabrics; its purpose was, as with the ribbed decoration which we shall discuss below, to maintain above all as shiny and smooth a surface as possible. In the southern part of the Danubian region we find these white-painted designs on a class of small, fine, vessels, sometimes in the shape of straight-sided cups, or, more commonly, of small pots with a sharp edge at their greatest width; in accordance with the "Danubian" tendency to tectonic decoration the white designs, here simple rectilinear patterns, are arranged round the shoulder of the vessel.

It is true that this ware is also found in the Black Earth Region, but only in Transylvania, not in its eastern or northern parts.[1] And though it would be conceivable that the white-on-black painting in the south-east of the Danubian region may have been due to influences from Transylvania, the available evidence seems to be strongly in favour of the opposite view. For often the white-painted wares in Transylvania show the flat ornamental knobs typical of the Danubian, and foreign to the Black Earth Region.[2] And as at Tordos in the Maros valley the Danubian civilization was predominant,[3] we need not be astonished to find its influence somewhat further east in the valley of the Alt.[4] Moreover, the white-painted pottery can only be considered as one variety of a larger class which, in its entirety, is typical of the southern Danube region; the description of the general character, technique, and shape of the white-painted specimens applies absolutely to that class as a whole, the decoration only showing several variations: *i.e.* the variations of the *white-painted*, *burnished*, *ribbed*, and *knobbed* decoration.

[1] Erösd, *Dolgozatak*, 1911, figs. 23, 28; others in the free-field style of the Black Earth region. From Priesterhügel, *Mitth. d. Praehist. Komm.*, 1913, figs. 79–83, 114–117. The few white-painted sherds from Schipenitz (*Kaindl. Jahrbuch K.K. Zentralkomm.*, II) are simply roughly executed wares of early "free-field" style.

[2] *Mitth. Praeh. Komm.*, 1913, figs. 115–16. The "bosses" at Kiev, Petreni, etc., are entirely different not only according to our view of their origin, but also in actual character, the wall of the vessel being modelled from within, while the Danubian knobs are applied as flat pastels of clay. (See above, p. 22.)

[3] No doubt can remain as to the close relation between Butmir and Tordos, which, for the material then known, was already stated by A. Voss, *Zeitschr. f. Ethnol.*, 1895, p. 129. Cf. Radimsky, loc. cit. I, pl. v, 13, 15, with *Zeitschr. f. Ethnol.*, 1903, p. 443, fig. 19; *Zeitschr. f. Ethnol.*, 1895, fig. 14, *a*, ibid.; 1903, fig. 18, 33, with Radimsky, *loc. cit.*, i, pl. v, 16, 17; *Zeitschr. f. Ethnol.*, 1903, fig. 22, with Radimsky, loc. cit., i, pl. vii, 8. Chaotic combinations of different ribbons, see *Zeitschr. f. Ethnol.*, loc. cit., fig. 23, and Radimsky, loc. cit., ii, pl. xiii, 12. Identical meander patterns, obliquely incised, as on the three-sided vessel from Tordos, cover four-sided "thrones" from Vinça (National Museum, Belgrade). Here again the neighbouring civilizations influence each other (vide infra, p. 34, n. 9).

[4] Where it preponderated probably in a somewhat later period. (See above, p. 27, n. 1.)

In the *burnish-decorated* variety the vessel is not entirely polished, but a band is reserved ; there the pottery appears in a lighter grey shade, for the compression of the surface under the burnishing tool produces the deep black shiny coating. (Pl. IV, 1–3.) The grey reserved band is now ornamented with designs simply drawn by the burnishing tool, and fine dark lines appear wherever it has passed ; so that rows of triangles, cross-hatchings, and other forms, are produced in black on a grey background.[1] This decoration is common in all layers at Vinça,[2] and presently we shall see where it is found outside the Danubian region proper.

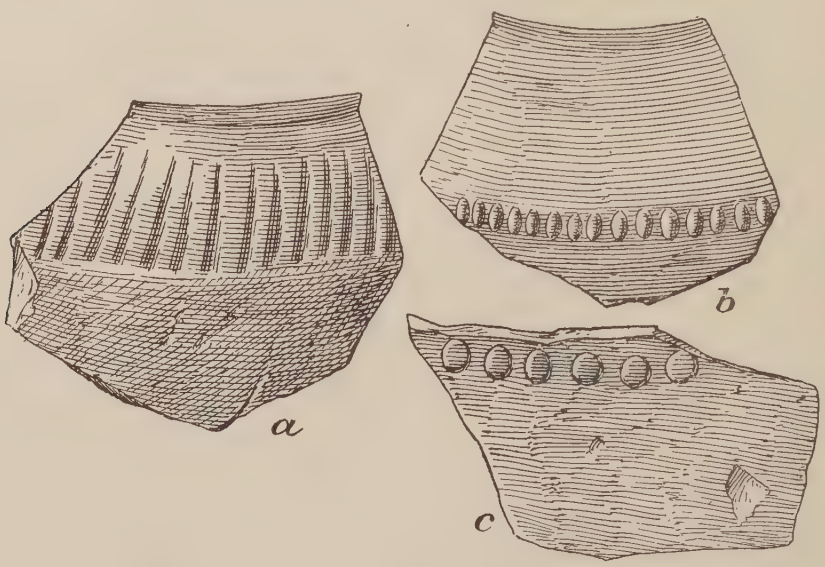


FIG. 7.—Pottery from Butmir (*a* and *b*, ribbed ; *c*, knobbed).

The *ribbed* ware (Fig. 7, *a*, *b*) is not only in general appearance and technique related to the burnish-decorated class, its mode of decoration almost seems a variety of that of the latter. When the pot is not yet dry enough to be quite hard, a burnishing tool is applied to it, and now of course produces shallow furrows. Then the pot is fired in the customary smoky atmosphere and polished all over afterwards. Thus it appears with a homogeneous jet-black shiny polish, but the previously impressed furrowed designs shine through its final coating. The sharp shoulder of the

[1] Vassits, *Praeh. Zeitschr*, ii, p. 29, and Wace and Thompson, *Preh. Thessaly*, p. 17, assume that the vessel was first entirely covered with a black polished slip which was partly scraped off afterwards. This assumption was probably influenced by the occurrence of the actually "scraped" ware A 3δ at Lianokhladi. In the cases of the black wares a moderately careful examination shows us that this explanation cannot be maintained. It is perfectly clear whether a design is actually drawn on the vase or produced by scraping off a coating. The "woolley" lines produced by the latter procedure never occur on the black wares ; on the contrary, their lines are particularly fine and sharp.

[2] *Praeh. Zeitschr.*, ii, pl. 12, 13.

pots is preferably treated thus (Fig. 7, *a*). This ware is as common at Vinça[1] as the burnish-decorated, and it also occurs at Butmir[2] and in the Theresien-Höhle[3] near Triest.

The *knobbed* ware is the result of a refined application, fit for small vessels, of the Danubian custom of decorating with flat circular knobs. In this special case, small round pastels of clay are applied to the surface in patterns, rows or round-edged zigzags (Fig. 6a ; Pl. IV, 4, 5 ; Fig. 7c). It is found in the Istrian coastlands,[4] at Butmir,[5] and combined with incised designs at Tordos.[6]

The characteristics of the different Danubian wares, both in style and in technique, being now defined, it remains to consider their extension towards the south-east ; and there it seems that they actually touched on the Ægean, and thus separated by the stretch of mountainous country between the Danube and Olympus, by all Serbia, Macedonia and Bulgaria, in fact, the Tripolje culture from that of Neolithic Greece.

In Macedonia the typical black wares occur, though they are hard to define chronologically. At Kilindir, Mr. Casson found them typical for his deepest strata,[7] and we find there also the massive black feet of Calices, so well known from Vinça.[8] In his extensive researches, M. Rey has only found the white-painted variety in the deeper layers of the mound of Sedes, but in small quantities ; of these few sherds, only one[9] can be reckoned to belong definitely to our class, while the others, like the incised wares which are their counterpart, show already the influences of a succeeding period. This is also the case with the white-painted wares found by Mr. W. A. Heurtley at Vardino, east of the Vardar, in exceptionally large quantities. The loose lines definitely betray an " old " style[10] and their chronology, though very problematic as to its higher limit, brings them down at any rate far below the period with which we are dealing at present.[11] But even there the straight-sided cup from Erösd[12] has many counter-

[1] *Praeh. Zeitschr.*, pl. ii *b*.

[2] Radimsky, loc. cit., i, fig. 40, 41.

[3] *Mitth. d. Praeh. Komm.*, 1888, p. 20, fig. 27.

[4] In the cavern Jama na Dolech. See Moser in *Sitzungsberichte d. Anthrop. Gesell. zu Wien*, 1903, pp. 69 sqq., especially p. 74, Abb. 28, 1. Abb. 28, 2, shows an incised sherd with the rectilinear Butmir design. (See our fig. 6.)

[5] Radimsky, loc. cit., i, fig. 42.

[6] *Zeitschr. f. Ethnol.*, 1903, p. 451, fig. 33.

[7] *Antiquaries' Journal*, 1926, p. 63.

[8] Ibid., pl. xi, p. 3.

[9] Léon Rey, " Observations sur les premiers habitats de la Macédoine " (*Bull. de Corr. Hell.*, pp. 41–43), ii, pl. xiii, 11, cf. p. 227, and pl. xiii, 1 ; undecorated, but with the characteristic, profile. The undecorated black ware was occasionally found in " Groupe A," *i.e.* the pottery of the earlier part of the long period from the early Metal Age to Mycenæan times.

[10] Part I, p. 19.

[11] *Liverpool Annals*, xii, pp. 31 sqq. The inference that at Sedes the white-painted wares were earlier than the red-on-white wares, corresponding with Thessaly A (p. 33, after Rey, p. 214) is not correct. M. Rey is, throughout, only concerned with chalcolithic and later times ; the Neolithic wares are treated separately, pp. 201–203, and do not actually enter into his field of research.

[12] *Dolgozatok*, 1911, fig. 23.

parts,[1] and so have the sharp-edged small pots, which are a typical shape.[2] There are ample remains of the rectilinear tectonic ornamentation found in western Transylvania, and this is even combined, on two fine Macedonian specimens, with another Danubian technique, the *ribbing* of the shoulder.[3] One of these specimens was actually found on virgin soil, and we may well assume that the rectilinear ornamentation represents the old Danubian tradition of which the Vardino examples are descendants.[4] This view is confirmed by a discovery at Aivatli,[5] on the Salonika-Seres road, of rectilinear white-painted wares under exceptional circumstances; at the same time, though not actually intermingled, were found red-on-white painted sherds which entitle us to extend the province of the Neolithic Greek civilization up to this point in the north.[6] The curvilinear designs at Vardino, even when they vaguely suggest vegetable forms, may be either due to a general slackening of the stylistic feeling or to foreign influences with which we shall soon have to deal. Besides the painted ware, we also find representatives of the other three Southern Danubian techniques: *burnished, knobbed,*[7] and *ribbed*[8] ware; and in the deepest layers at Kilindir Mr. Casson found a knobbed handle which appears exactly similar at Butmir.[9]

The evidence from Thrace and Bulgaria tallies with that from Macedonia; at Černavoda,[10] the late descendants of Tripolje wares are found overlaying Danubian pottery, viz. the pear-shaped pot, typical in its black variety of Butmir and Lengyel, and also white-on-black painted wares. And wherever in Bulgaria strata

[1] *Liverpool Annals*, vol. xii, p. 21, fig. 4, top row.

[2] Ibid., fig. 4, nn. 12–26.

[3] Ibid., pl. ix, 8; xvi, 20.

[4] Originally the spiral seems not to occur south of Butmir. At Vinça the deepest layers do not contain it, nor its meander-like derivatives. The great migration brought it to the south. But as other objects rather than pottery were its vehicle (vide infra, pp. 116 and 140) one cannot synchronize the layers in which the layers first appear on ceramic remains, as its adoption is dependent on the whim of the potters in each locality.

[5] *Annals Brit. School Arch.*, xxiii, p. 13 and 30; and *Catalogue of Greek Vases in the Brit. Museum*, i, p. 18, A 87.

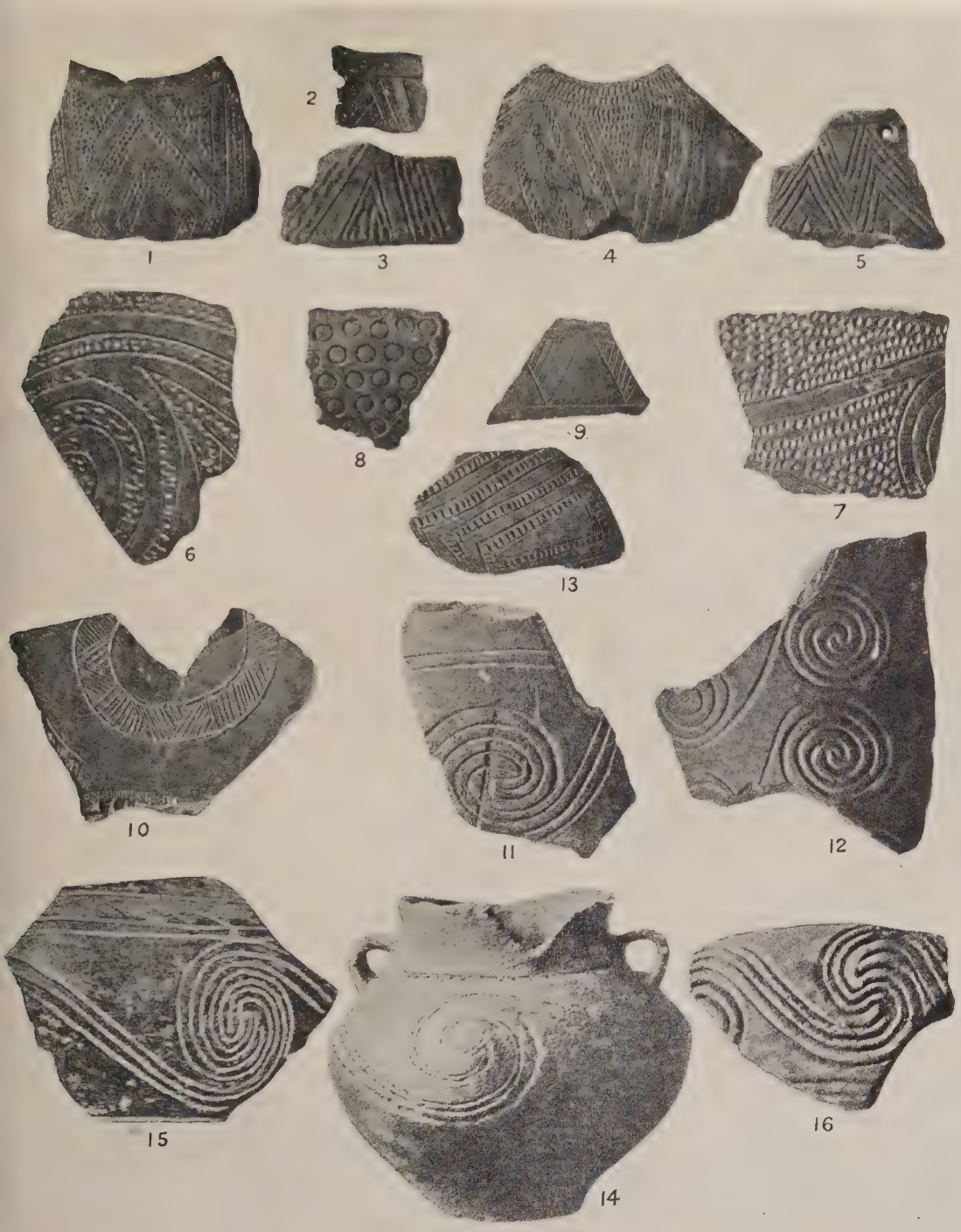
[6] See above, p. 12. The pottery was found in the walls on an officer's dug-out (*Ann. Brit. School Arch.*, xxiii, p. 13) on an occasion when by mere accident excavations were *not* made in one of the mounds which are so numerous in the country. (See below, p. 33.)

[7] *Liverpool Annals*, xii, p. 20, and pl. xv, 15; and "very highly polished," which is fired yellow (p. 22), just as the example of knobbed ware, also polished (ibid., p. 21), and another sherd from Drakhmani (Chaeronea Museum) belonging to the knobbed ware A 5, are fired red. For such accidental variations in colouring in this technique, see below, p. 63. The comparatively late age of the Vardino examples, which border on a period of oxidizing firing, may also account for this phenomenon.

[8] M. Rey's style 4, loc. cit., p. 255 sq., and pl. xxiii. Also at Aivatla, *Ann. Brit. School Arch.*, xxiii, p. 13 (3).

[9] *Antiquaries' Journal*, 1926, pl. viii, 3, with Radimsky, loc. cit., i, p. 19, fig. 39. A similar handle was found at Klakar (*Wiss. Mitth. Bosn. Herceg*, xi, pl. viii, p. 16), a site which is certainly neolithic.

[10] *Praehist. Zeitsch.*, 1924, pp. 23–24, fig. 38.



POTTERY FROM THE DANUBIAN REGION.

1–13. Butmir; 14–16. Hungary (Museum of Nagy Enyed).

are struck which suggest a date earlier than the native descendants of the Black Earth Region, we find either pottery too simple to show any definite affinities at all,[1] or clear reminders of Danubian tradition,[2] which can in no way be linked up with the succeeding Tripolje pottery.

Thus it seems that the Black Earth Region was separated from Neolithic Greece by the Danubian civilization. The Greek area extended up to Aivatli, and some more sherds are found in the deepest layers of the mound of Sedes, westwards in Chalcidice.[3] At Aivatli, and in the deepest layers at Sedes, also occurred the white-painted black polished ware, and it is therefore probable that in this neighbourhood the two cultures touched or even, to a small extent, overlapped.[4] But the rarity of "Danubian" material from Macedonia and Bulgaria is well explained by the stratigraphical circumstances in which what scanty evidence we possess was found. Apparently we have not to look for traces of this earlier culture in the mounds which have occupied the attention of archæologists almost exclusively till now. For the chance find at Aivatli, the occurrence of white-on-black ware only in the deepest layers at Sedes, and the results of the cave-explorations in Bulgaria, suggest that either in caves or in open villages in the plain, as in Thessaly, remains of the earliest inhabitants are most likely to be recovered. The mounds were apparently only occupied in a subsequent period by foreign settlers from the north-east.[5]

The northern invasions.

¶ 6. The migratory movements with which we have now to deal mark the incipient Copper Age in South-eastern Europe, and they actually appear as if directed towards the centre from which the revolutionary movement spread through the ancient world.

[1] This is the case in the cave Pod-Grado near Madara in North-eastern Bulgaria. See Popoff in *Praeh. Zeitsch.*, iv, pp. 88 sqq.

[2] The shape of the pottery from the early chalcolithic layer in the cave of Malkata Podlisza in North Bulgaria (Popoff, *Praeh. Zeitsch.*, v, p. 452, Abb. 5) has no affinity whatsoever with Tripolje shapes, and resembles, if anything, the Danubian pottery (cf. *Zeitsch. f. Ethnol.*, 1903, p. 440, figs. 1–13). It has certainly nothing to do with the pottery found in caves in the Government of Kiev by Chvojka (*Trudi*, xi, pl. xviii, xix), which seems to have northern and eastern affinities. But in the Bulgarian caves were also found sherds of "dünnen und kleinen Gefässen mit schwarzer polierter Oberfläche" (*Praeh. Zeitsch.*, vi, p. 454), which we can now classify.

[3] M. Rey, loc. cit., p. 210.

[4] See also the common features of Danubian and Thessalian civilizations (p. 35, n. 1; p. 44, n. 1), which suggest that they were neighbours, and thus support our view about the eastern extent of the Danubian civilization. This one would, moreover, expect, if we are to hold Alpine man mainly responsible for this culture.

[5] Vardino, with its wealth of white and black wares, is an exception, perhaps related to the bulk of Macedonian mounds, as Sesklo, with an A and a B settlement, stands to Dhimini, founded in the B period. Or perhaps Vardino was particularly conservative and little affected by the changes in the country, because of its out-of-the-way position (*Liverpool Annals*, loc.. cit, pp. 15, 16). Cf. below, p. 41.

Copper.

Already most of the sites which we have mentioned show the coming of copper. Butmir is still Neolithic, and at Cucuteni, as at Erösd, the deepest layers are free from metal.[1] But then at Vinça from a very early stratum onward,[2] in Macedonia,[3] Thrace[4] and in Erösd II and Cucuteni II,[5] copper implements are found. Cucuteni II, however, contained Minyan ware, and is thus contemporary with the Middle Helladic Period when in Greece the Bronze Age had already started.

Higher up the Danube, in Moravia, the first metal appears sporadically in the second stage of painted ceramics[6]; but a considerable time has still to elapse before the actual Copper Age starts, and then there appear at the same time signs of intensified contact with the south in the shape of the "ansa cornuta,"[7] and "kannelierte Keramik,"[8] which is nothing but our ribbed black polished ware, which persisted in the south for a considerable time.[9] While thus copper only becomes of practical importance in Moravia comparatively late, one finds on the contrary that in the Government of Kiev, where access from Western Asia was easy, and where traces of such intercourse are actually found, a number of copper implements already appear together with remains which belong definitely to an early stage of the civilization;[10] and in Central Greece and on the Ægean islands copper not only comes early, but leaves no doubt as to its Asiatic origin.

[1] *Dolgozatok*, 1911, p. 259.

[2] *Praeh. Zeitsch.*, ii, p. 31.

[3] M. Rey, loc. cit., ii, p. 244, and i, pl. xix (axe of 96 per cent. Cu).

[4] *Praeh. Zeitsch.*, p. 454 (needle). *Bull. Soc. Arch. Bulgare*, vi, p. 155 (axe, needle, 99½ per cent. Cu).

[5] *Zeitsch. f. Ethnol.*, 1911, p. 587.

[6] At Lengyel one occurrence of some copper beads strung with shells is noted, while the pottery, with its red-on-black paint, certainly corresponds with Palliardi's oldest group of painted wares. But the occurrence of metal as we have seen is by no means rare in the Stone Age (see above, p. 5, for an exact Egyptian parallel). There can be no question of assigning Lengyel to the Copper Age on the strength of these objects, which were probably due to chance reduction.

[7] Palliardi, *Wiener Praeh. Zeitsch.*, figs. 27 and (especially) 28; also pp. 12 sqq. On the origin of these elaborated handles in the Southern Danubian region, see below, p. 51, note 2.

[8] Ibid., figs. 29, 30.

[9] On the "Kraljevine" in Bosnia, *Mitth. Praeh. Komm.*, 1899, pp. 41, 55. Also in Macedonia, where "Style, n. 4" belongs to Group B.

[10] Chvojka (*Trudi*, xi, p. 783) found in one instance a flat copper axe (ibid., pl. xxi, 5), together with flint scrapers and a piece of painted "binocle" vase (ibid., pl. xxviii, 1) of culture A (on the relative chronology of culture A, see above, p. 18, n. 1), and another one (ibid., pl. xxi, 7) with vessels, of which the description, such as it is ("fantastic schemes in dark on a white ground"), suggests Culture A; so does fig. 84, which belongs to the group. Two more axes of the same type (pl. xxi, 8, 13) were found unconnected with any pottery, like the mould in two parts (p. 760), which was found between two areas; as an axe of elk-horn exactly fitted into it, it is perhaps possible to admit its early age, though pure copper is not easily cast in closed moulds. Now, it is very interesting that a number of finds point to Asiatic connections for Culture A. Most obvious is a fine composite mace-head (*Trudi*, xi, pl. xxi, 4) which has close analogies in the Caucasus (*Praeh. Zeitschr.*, iv, 31, figs. 7 and 8) and farther south (the reservations made in "Studies," I, pp. 125 sqq., do not apply here, as it is quite isolated in the Tripolje culture), found under the

Thus throughout South-eastern Europe we find the metal earlier, and in larger quantities, wherever intercourse with Asia is easy: Kiev, the Ægean, the Eastern Balkans; later and more sporadically the further from Asia we are, as in Moravia, or at such sites as Butmir, Petreni, and Cucuteni, which are situated far from the great routes leading up through the river-valleys from Western Asia to Central Europe. Central and Eastern European archæology then points as definitely as does Egyptology towards Western Asia as the region from which the Copper Age, such as we have defined it above, radiated.

It is perfectly clear from Ægean evidence that in the south the initiative lay with Asia. In the north matters are less obvious; but in Vinça, an important station where the road from south to north through the valleys of the Vardar and the Morava joins the trunk road along the Danube, we find from very early layers signs of intercourse with the Troad.[1] At least, so one would like to explain the

large pear-shaped pot of our pl. i, 10. Then there is a curious occurrence once of camel bones (skull, ribs, etc., see *Trudi*, xi, p. 786) buried in an area of Culture A, and, finally, an exceptional pot, which, to judge from *Zapiski*, v, pl. v (in *Trudi*, xi, it appears on a plate with mixed contents), should belong to Culture A also. This pot resembles painted pottery found in China (Arne in *Palæontologia Sinica*, Series D, vol. i, fasc. 1, pl. v, 12–14; cf. J. G. Andersson in *Bull. of the Geolog. Survey of China*, 5 (1923), pl. xiii); also sherds brought back by Sir Aurel Stein from Seïstan (*Burlington Magazine*, December, 1925). Certainly our vessel shows more resemblance to these foreign pots than it does to any other Tripolje ware, with which it contrasts, in fact, fundamentally with its panelled decoration. We shall return to the problems which it raises in the Appendix. As far as our vessel (*Trudi*, xi, pl. xxviii, 10) is concerned, it is just possible that a decorative motif was taken over by the Tripolje culture from an imported object, whether vessel or bag, by the nomads from the Steppe; these nomads then would have been the intermediaries, linking up in an irregular way the regions on their borders. At present we only want to stress the point that in Culture A copper is found, and signs of intercourse with Asia; these latter are, for some reason which we shall soon understand (vide infra, p. 117), absent from culture B, which also lacks metal.

[1] This aspect of his finds is particularly stressed by the distinguished excavator Prof. Vassits (*Annual British School Arch.*, xiv, p. 319 sqq.; *Praeh. Zeitsch.*, ii, pp. 32 sqq.). The footed calix (*Praeh. Zeitsch.*, ii, pl. ii, a) is a doubtful piece of evidence; its red wash is unusual in Danubian ceramics, but we can hardly admit its Trojan origin, seeing that in an isolated Neolithic site like Butmir these articles are found (Radimsky, loc. cit., ii, fig. 26), together with the hollow cylindrical foot (ibid., fig. 24, 25) which Vassits compares with examples from Troy, and also with the high hollow foot (ibid., fig. 27), which he derives from the same source (*Memnon*, 1907, pl. vii, fig. 35, printed upside down; cf. Glas, lxx, fig. 59). It is thus hard to leave the scope of the Balkan Neolithic world in explaining the calix with the solid foot, and, in fact, the few fragments which I have handled suggested to me more than anything else the monochrome red pottery (A 1) of Thessaly. The early settlement at Vinça and Neolithic Thessaly possessed also other features in common, *e.g.* elaborately modelled "mother goddess" statuettes, and three or four-legged thrones or altars, which are also found in Transylvania and Galicia. (*Vide supra*, p. 33, n. 4, and *infra*, pp. 44, n. 1; 46; 127; 128, n. 4.)

anthropomorphic vases.[1] But even at Vinça we find the Asiatic influences succeeded and actually wiped out by the same wave of migration, which, apparently provoked by the newly established contact with the south-east, and probably yielding to pressure from the north,[2] eventually reaches the shores of the Ægean.

Dhimini. We had better start our survey of this important event, as before, from Thessaly, where observations have been more numerous and detailed than anywhere else; and where, moreover, the changes are so striking that their foreign origin has already long been recognized, and the "East European relations of the Dhimini culture" have been established by Mr. Childe in an able and careful study.[3] Let us note at once that the Dhimini culture is only prevalent in a clearly limited region, and, in fact, can hardly be said to have extended beyond the valley which stretches from the Pagasæan Gulf past Dhimini and Sesklo northwards to Larissa.[4] But within this restricted area its remains are numerous and show a definite break with what precedes them. The settlements, now fortified, are situated on hills, and the houses are built like primitive "megara." The shapes of the pottery are much less differentiated according to the structural functions of their constituent elements than those of the preceding A wares, and thus can in no way be considered a continuation of these. All the new features are, however, easily explicable, as Mr. Childe has shown in detail, when we assume that they were brought into the country by immigrants from the Black Earth Region. Between Thrace proper and Thessaly we shall find traces of this southward movement at Dikilitash, on the Drama-Cavalla road, and at Gomonitsh, in North-eastern Chalcidice. But in Macedonia there were few, if any, settlements of Tripolje people, and we shall see that new arrivals from the north-west strengthened the Danubian character of its civilization.

[1] *Praeh. Zeitsch.*, ii, p. 30, fig. 8, and p. 35: *Memnon*, 1907, pl. v. Though this type only starts with the second city of Troy and is confined to that site in its subsequent development, it is impossible to prove that in its origin it is not Anatolian, or at least Trojan. For the farther we go, the more debased and misunderstood the features are. The clearest types belong to Hissarlik II; rather closely related to these is the type which, as Prof. Vassits recognized (loc. cit.), was found in Thessaly (Tsountas, Αἱ προιστορικαὶ ἀκροπόλεις Διμηνίου και Σέσκλου, fig. 228, p. 301). At Vinça the specimen figured, as well as the others in the Museum at Belgrade, is entirely stylized into ornaments and often disintegrated. Finally, at Tordos, we find the most debased types on pottery, with a late "Butmir ornament" (*Zeitsch. f. Ethnol.*, 1903, p. 455, fig. 35). They are on a level with such Thessalian vases as Tsountas, loc. cit., pl. xxiii, fig. 3, 4, which belong to the Third Thessalian Period, which is marked by a locally circumscribed advance of northern neighbours into Thessaly (see below, p. 45). The Anthropomorphic Vases' origin may have been, on the other hand, in the rich plastic art of South-eastern Europe, since that affected vases also (*Journ. Roy. Anthrop. Inst.*, 1923, pl. xvi, fig. 1, b; *Bull. Soc. Arch. Bulgare*, pl. iv; *Bull. d. Corresp. Hellen.*, 1906, p. 412, fig. 49, etc.); but if they are of European origin, we cannot prove it. Cf. p. 58, n. 2c.

[2] See below, p. 176.

[3] *Journ. Hellen. Studies*, 1922, pp. 264 sqq. Prof. Schuchhardt's suggestive book, *Alt Europa*, is the first attempt to give a synthesis of all the material; unfortunately, I have to disagree in very many points.

[4] Wace and Thompson, loc. cit., p. 243.

POTTERY FROM CENTRAL GREECE AND THRACE.

1. "Chaeronea-ware" from Tiryns; 2 and 4. Danubian ware from Tiryns; 3. Wish-bone handle from Hagia Marina; 5–7. From Dikilitash.

An analysis of the pottery ought to reveal at what stage of the development these immigrants went forth from their homes, though we may admit at once that it is impossible to fix their chronological relation to the different wares discussed above, as we have seen that we have no means to decide whether the period of evolution was identical in the different parts of the Black Earth Region; and *a priori* it can be assumed that this sequence of development would be considerably hastened in the case of immigrants, as we know that cultural equipment, language as well as material culture, changes rapidly when a people has broken away from its native soil. And so we find, indeed, that the Dhimini ware is in no way closely related to any of the different shades of Tripolje pottery which we know.

The shapes are at first sight the most convincing argument in favour of at least some connection. The flat inverted-cone shape of the bowls is especially typical. But the designs are disintegrated almost beyond recognition, and the isolated spirals which are in various ways strewn among entirely unrelated motifs certainly appear as foreign elements in Thessaly, but are almost as much without close parallels in the Black Earth Region.[1] Still the starting-point of these wares within the Black Earth Region can *not* have been very advanced. That is definitely shown by the entire absence of structural elements in the shapes as well as in the decoration, by the unchallenged predominance of the "free-field" style,[2] and, to a certain extent, by the prevalence of substantial blocks of ornaments of ribbon-like designs.[3]

Polychromy and monochromy are both found on the new wares; but it seems that the new-comers on their arrival possessed polychrome ware which was subse-

[1] Such sherds, as Tsountas, loc. cit., pl. xxiv, 9; xxix, 3, 6, etc., may find a parallel on a disintegrated design from Priesterhügel (*Mitt. Praeh. Komm.*, 1903, fig. 109). Others, like Tsountas, pl. xx, 1; xxvii, 6, etc., are unparalleled.

[2] Tsountas, loc. cit., pl. ix; the inside with just the barest structural element admitted (rim and base), but otherwise entirely without connection between design and the shape of the pot, the outside entirely "free-field," the pot-surface simply defining a mere accidental cutting out of an unlimited design-field. So also pl. xx, xxi, xxii, xxiv, etc.

[3] These are produced in a peculiar way, viz., by outlining them and then covering the background with oblique lines, Tsountas, loc. cit., pl. xx, xxi, xxvii, xxviii, etc.; Wace and Thompson, loc. cit., pl. i). Sometimes the designs are hatched in that way (Tsountas, loc. cit., fig. 118, pl. xx, 2), and only in exceptional instances actual bands of parallel lines appear (Tsountas loc. cit., pl. ix, xi), as in the Tripolje culture itself (cf. *Trudi*, xi, pl. xviii; *Trudi*, xiii, *passim*, and also the transitional sherds from Cucuteni I: see above, p. 20, n. 1). Thus we have a very interesting instance of a style which, being uprooted, and having lost contact with its parent stock, evolves quickly, but maintains throughout the characteristics of that stage that was reached at the moment of separation (*e.g.* free-field style), and thus shows only partially, (*e.g.* bands of parallel lines) the same phenomena as resulted from the natural and undisturbed development in the original homeland, where these phenomena were, moreover, produced in a much later period in absolute chronology, than that to which the emigrated and thus quickened civilization belongs. It is useful to note this pitfall before using the evidence for dating purposes (see also next note). The important point for the chronology is that, in contrast with the similarities with later stages in the Tripolje culture, which give no clue as to the moment of separation, close similarities with the *early* stages, even if rare, are inexplicable when we assume a later date for the emigration.

quently simplified[1]; traces of their polychrome pottery are found much farther afield than any traces of the monochrome Dhimini ware, the inference being that their wider diffusion in their original *élan* accounts for the polychrome ware, while the monochrome ware was subsequently evolved in that part only where they actually took root.[2] In fact, their polychrome ware is even found south of the Corinthian Gulf at Gonia,[3] in quantities which suggest an actual small settlement there of these Northerners, who were subsequently swamped by Early Helladic I people with

Gonia.

FIG. 8.—Vase from Kodjadermen.

Urfirnis ware; for it is with this ware that the trichrome sherds were intermingled in the higher layers. Now this occurrence of a small settlement on the southern shores of the Corinthian Gulf[4] shows at once that the movement was of more consequence than any local Thessalian change ever could be. Moreover, we must expect to find traces of the changes in the north of Greece, for, as we have seen, the

[1] Technically B3*a* (1) corresponds to Erösd, B3*a* (2) to Petreni, and Cucuteni II, B3*a* (3), to the "transitional" sherds of Cucuteni I (see above, p. 20, n. 1) and B3*b* to Cucuteni I, Erösd I, Priesterhügel and Chvojka's Culture A.

[2] The nature of this polychrome decoration (Tsountas, loc. cit. pl. viii, 3–6; x, 30) points in exactly the same direction as the general stylistic character of the "Dhimini wares": their makers must have proceeded from the Black Earth Region at a comparatively early stage, corresponding to Cucuteni I, Erösd, and Chvojka's Culture A. For the polychromy is entirely used to stress the opposition of surface to surface, in red and white, black serving merely to mark off the limit between the two.

[3] Blegen, Korakou, p. 123. The doubt expressed by Mr. Forsdyke (Catal. of the Greek Vases in the Brit. Museum I, 1, p. xvii, n. 5) as to the identity of these fragments with Thessalian B3*b* ware is entirely unfounded, as he would be the first to admit had he seen the trays of these sherds at the American and British Schools at Athens. There are several practically identical with Tsountas, loc. cit., pl. viii, 6.

[4] It is interesting to note that Lianokladhi, which they must have passed on their way southwards, does show their influence indirectly, viz., in red-on-white wares (Wace and Thompson, loc. cit., fig. 118), which only partly belong to the Chaeronea variety, while the others hardly link up with any known ware of their class, but show rather Dhimini designs. It should be noted that the B wares found (Wace and Thompson, loc. cit., p. 177) show that the first settlement lasted well into the second period.

region between the Danube and Olympus was originally occupied by an offshoot of the Danubian civilization, and thus no immigrants from the Black Earth Region could reach Greece without considerably upsetting the country between. We actually possess evidence that they did, and it even seems that the intermediate region was colonized by the new-comers.

Thrace.

It has long been recognized that the typical Thracian chalcolithic civilization is a descendant of the Tripolje culture.[1] As such it cannot be related to its Neolithic predecessor, which was probably Danubian, as we have seen; but, just as in Thessaly, this Thracian off-shoot of the Tripolje culture, uprooted and separated from its place of origin, developed on lines of its own. Thus the final outcome in Thessaly and Thrace is rather different, each of the two regions having specialized, as it were, certain distinct points of the common inheritance (Pl. III, 5–7; fig. 8). While in Thessaly black painting (B 3α (2)) on a polished buff ground is by far the commonest technique, Thrace specially develops the B 3α (1) manner, painting with a medium that may appear as white or as black on a highly ferruginous and highly polished surface which may be red or black, according to the firing.[2] Thrace also, like Macedonia, but in contrast with Thessaly, favours incised wares with white filling.[3] The designs used differ, with a few exceptions[4] (Pl. III, 7), considerably from those used in Thessaly. To some extent these differences may be due to the influences of the aboriginal civilization which the immigrants found in the countries they occupied, and which was not identical, as we know. Definite influences of the Danubian culture are found in Thrace and Bulgaria, where intercourse along the river was easy enough; so we find there traces of knobbed decoration,[5] unknown on any Dhimini ware; and, on the other hand, we find at Vinça

[1] Childe, in *Man*, 1923, 2.

[2] The shading of the design-paint is as yet unexplained (see Childe, in *Man*, 1923, p. 5), but the use of graphite, as in Thrace, gives the same effect. The uneven colouring of the surface is the usual consequence of primitive firing; *cf.* Erösd, but see also the detailed comparison of Thessalian with East European wares by Childe, *Journ. Hellen. Studies*, 1922, pp. 255 sqq.

[3] Often these wares (*e.g.* iv, *Bull. Soc. Arch. Bulg.* p. 160; p. 185, figs. 60, etc.) look much like those found by Tsountas at Argissa (loc. cit., pl. xiv, xiii 3, 8), for which there are no parallels in Thessaly (A2 stands for a collection of entirely heterogeneous ceramics); but the trial trench of Tsountas does not allow one to be certain about their relative date in Thessaly (loc. cit., p. 168). The fact that red-on-white wares were found as well is not sufficient to date them (as Wace and Thompson do). The latter overlap with the Second Period, and the Argissa finds may therefore go back to the same source as the Bulgarian ware. Compare also Tsountas, loc. cit., pl. xiii, 7, with *Praeh. Zeitsch.*, 1914, p. 74, C.

[4] *Bull. d. Corresp. Hell.*, 1906, p. 383, fig. 18*b*. *Annual Brit. School Arch. at Athens*, pl. xxiii, p. 45 (h, j), p. 47 (g, m, n; cf. Wace and Thompson, loc. cit., fig. 12, 21).

[5] *Praeh. Zeitsch.*, 1924, fig. 28. *Bull. Soc. Arch. Bulgare*, iv, fig. 152, 153, etc.; iv, fig. 104b, 107, 108, etc. And specially *Bull. d. Corresp. Hell.*, 1906, p. 416, fig. 62. One may doubt whether such vessels as *Bull. Soc. Arch. Bulgare*, vi, 104*a*, and pl. v, 8, are imitations of "ribbed" ware, or independent of Danubian ceramics and belonging to the favourite Bulgarian class of vessels ornamented with thin applied clay cords.

migration in general. For if we look beyond the very limited area which was lastingly affected by the immigrants from the Black Earth Region, we find, in Thessaly, but also in Central Greece and even in the Cyclades and as far as Crete, no less fundamental changes than round the Pagasæan Gulf; and these changes speak again clearly of new arrivals, this time, however, from the Danubian region. These new-comers were as little able as the Tripolje people to hold their own against the eastern influences, which ultimately succeeded in dominating, at least in appearance, the early civilization of the Ægean. But the extent to which the Danubian features spread and maintained themselves for some time in the midst of foreign surroundings allows us to assume that those whose presence they betray were numerous and vigorous enough to enter, on something like an equal footing with the aboriginal element, which we have considered, and with the Asiatic, which we soon shall discuss, into the peculiar organism of Early Ægean civilization.

The Danubian elements.

¶ 7. We recognize the presence of Danubian immigrants in Greece by their unmistakable classes of highly polished carboniferous wares, which, as we have seen, are typical of their southern region.

This pottery is found most plentifully in Phocis and Boeotia (Pl. IV), where it is actually characteristic of certain strata. The deepest layer of Orchomenos, as well as that of Hagia Marina and Drakhmani, contains the *knobbed* ware (A5 γ)[1] in large quantities; but there is also a considerable amount of *burnish-decorated* (γ1, α 2) (fig. 9 and Pl. IV, 1-3)[2], and *ribbed* ware (γ 1, α 3) (Pl. IV, 4)[3], and a certain quantity of fragments decorated with the typical patterns in *white paint* (γ 1, α 1).[4] It is unfortunate that the finds from both sites are very summarily published; but a few days passed amongst the cases with which the Chaeronea Museum is stacked

[1] Cf. Wace and Thompson, loc. cit.,,fig. 142, *e*, and the Istrian example of our fig. 6, *a*.

[2] Cf. Tsountas, loc. cit., p. 240, fig. 140. Wace and Thompson, loc. cit., fig. 55, *n–p*.

[3] Tsountas, loc. cit., p. 240, fig. 139. Wace and Thompson, loc. cit., fig. 55 *m*. At Orchomenos the ribbed ware is produced with a refinement unrivalled elsewhere; as we have seen, all these black wares of the southern Danubian region have their ornament arranged in horizontal belts. At Orchomenos the belts of ribbed designs are limited by a row of minute plastic knobs, just like the "beading" of our table silver, see Pl. IV, 4. Sometimes this "beading" is also found as exclusive ornamentation: see *Zeitschr. f. Ethnol.*, 1912, p. 862, fig. 13, from Leukas; here the "beading" is even more minute than at Orchomenos.

[4] Wace and Thompson assume that the knobbed ware (their A, γ) belongs to the First Thessalian Period, and takes in the south the place of the red A1 wares of Thessaly proper. This is caused by their somewhat too rigid use of the red-on-white wares as dating evidence for the deepest layers at Orchomenos and Hagia Marina, which overlap with the second, the succeeding period, naturally. On the other hand, Childe has shown already that at Tsangli the black γ wares belong to the Second Period (*Journ. Hell. Studies*, 1915, p. 200). The break in the population which Sotiriades rightly postulates (*Revue des Etudes Grecques*, 1912, p. 291) does therefore not coincide with the introduction of "Urfirnis," but with the appearance of the Danubian wares, the "espèce bucchero" of his early strata, which form part of a "homogénéité" only "réelle" in appearance and which we may analyse into their constituents if we enlarge the field of our comparisons.

may convince anyone that the civilization of the makers of such masses of black "Danubian" fabrics, which evince a complete break with the earlier native ceramics, must have flourished with particular success on these sites.

Phocis and Bœotia.

At Orchomenos they were the builders of the "Rundbauten," which mark the first stratum where rectangular groundplans are in the minority. Underneath these were found faint traces of mud huts without stone foundations,[1] and as Mr. Childe suggested, from these may come the A wares of that stratum.[2] Whether all the red-on-white wares (A3*b*, Chaeronea ware) antedate the "Danubian" "Rundbauten" is hard to say: they may well have overlapped, and we need

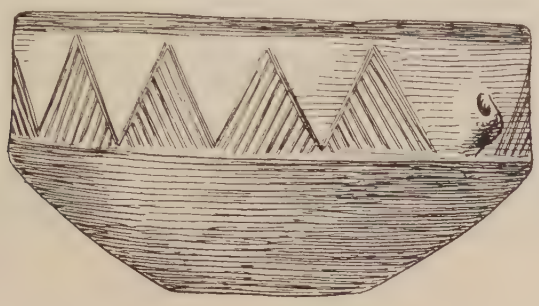


Fig. 9.—Burnish-decorated vessel from Drachmani.

not accept any break in the continuity of the settlement on the spot, just as Dianokladhi I persisted into the Second Period. But these A wares are very rare, and with the new black wares were found mainly the later native styles developed out of the red-on-white ware[3]; they belong to the Second Period, and confirm the theory that the Danubians flourished at Orchomenos while the Tripolje people were settled between Larissa and Dhimini.[4]

We find exactly similar conditions prevailing in the neighbouring settlements of Drakhmani and Hagia Marina. The deepest strata contain the same wares as Orchomenos,[5] but, in addition, "raking" handles[6] and some important incised wares, which definitely point back again to a Southern Danubian origin for their

[1] Bulle, *Orchomenos*, i, p. 19.

[2] *Journ. Hell. Studies*, 1915, p. 200. The knobbed ware (A 5γ) is, of course, no longer to be considered as belonging to the First Period. On the other hand, I found a certain number of monochrome red wares (A1) among the remains of the first stratum, mainly bases and necks, as in Wace and Thompson, loc. cit., fig. 40 *g*, fig. 41 *a*; cf. also ibid., fig. 42 *c*.

[3] B 3*d*, B 3*e*, B 3γ, B 3ζ, vide supra, p. 12; infra, 137 sq.

[4] See for additional proof the stratification at Tsangli (Wace and Thompson, loc. cit., p. 86 sqq.).

[5] Viz. A3b, B3e, B3γ, B 3ζ, A 5γ, Γ 1 α 1, Γ 1 α 2, Γ 1 α 3.

[6] *Vide infra*, p. 51.

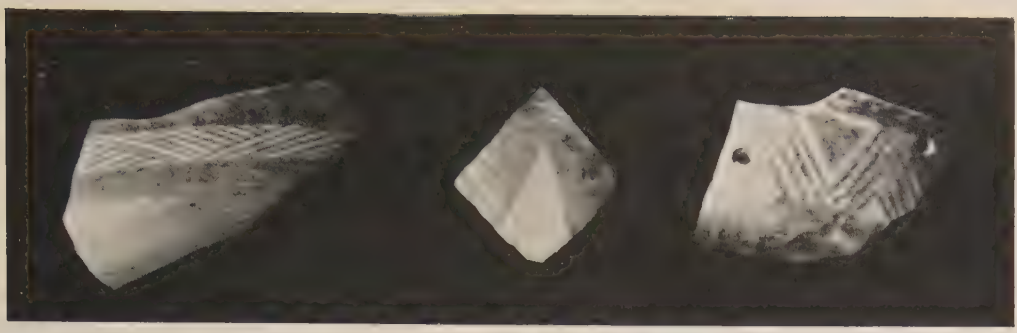
makers.[1] From Hagia Marina, moreover, comes evidence that in Central Greece, as in Thessaly, this Second Period is no longer Neolithic. M. Sotiriades actually found there copper bracelets and daggers almost on virgin soil.[2] In fact, it is probable that it is actually the metal trade which must explain the wealth of settlements in the plain of the Kephissos; anyhow it seems that there lay the centre of the "Danubian" power. Still, their remains are found further afield, in Northern and Central Thessaly[3]—not in the east, where the Dhimini culture flourished—and also in Corinth, where their black pottery was found in Mrs. Walker-Kosmopoulos' careful excavations intermingled with "Urfirnis." This would, therefore, correspond with the later stage of Gonia,[4] and thus the arrival of "Danubian" would be slightly later than that of the "Tripolje" people. But we cannot press this point, because we know absolutely nothing of the migration itself, but only of the results; the ups and downs, the oscillations, which will have been part of the movement, naturally left no traces which survived, and our evidence only reflects the period of the resulting settlement and established conditions, a position of stability in which the action and reaction of the numerous forces came to rest. Then we find descendants of the Tripolje culture settled from the Pagasæan gulf up to Larissa, and also at Gonia on the Corinthian gulf,

[1] They are from Hagia Marina; incised dotted meanders without white-filling, recalling early Vinça sherds and their parallels from Tordos and Bosnia, as also Tsountas, loc. cit., figs. 113, 114 (Second Period). Further, in fine grey ware sherds with designs impressed with cords (Schnurkeramik, Pl. IV, 6), which corresponds exactly with finds from the "Kraljevine" in *Wiss. Mitth. aus Bosnien und Herçegovina*, 1899, p. 6, figs. 14, 15. Compare also fig. 13 with the sherds mentioned just before. One sherd from Drachmani resembles strikingly another from Vinça (*Praeh. Zeitschr.*, ii, pl. xiv, d). Two other sherds, one from Chaeronea and the other from Tiryns, resemble a Mondsee example (Hoernes, *Urgeschichte der Bildende Kunst in Europa*, 339, 8). A curious instance is provided by the incised legs of a class of vessels of which not a single specimen is complete in Greece (our Pl. IV, 7). They recall at once red-on-white painted ones (Ephemeris, 1908, lxxv, fig. 11; Tsountas, loc. cit., figs. 86, 87; Wace and Thompson, loc. cit., fig. 57*g*; cf. ibid., fig. 42*d*, in A1 ware). These "altars" or "thrones" (Childe, *Dawn of European Civilization*, p. 67) seem to be one of the features common from the earliest times to the Danubian and the Black Earth region (cf. p. 35, n. 1) and even to Neolithic Thessaly (Vinça, *Praeh. Zeitschr.*, ii, p. 39. This is itself an importation at Vinça from a region where painted ware was made, but there are many black ones in the Belgrade Museum. Further from *Journ. Roy. Anthrop. Inst.*, 1923, pl. xvi, Schipenitz; Childe, loc. cit., p. 162, fig. 73, f, from Podolia). Therefore it is not necessary to see in the black ones with white-filled incisions direct descendants of those of the First Thessalian Period, but more probably they are, as their technique and spiral-decoration suggest, connected with the Danubians. Their adherence to the incised decoration points to a ritual use (at Tsangli, Drakhmani, Hagia Marina, Corinth), for the incised decoration otherwise hardly holds its own with the painting.

[2] *Revue des Etudes Grecques*, 1912, p. 276 (92 per cent. Cu).

[3] There are sherds of Danubian pottery at the British School of Archæology in Athens from Mesiani Maghula, on the road from Larissa to Tirnova (sites 31, 32, and 33), Drousanadha, site 22 (near Topuslar), Tsangli, and Rini.

[4] *Vide supra*, p. 38.



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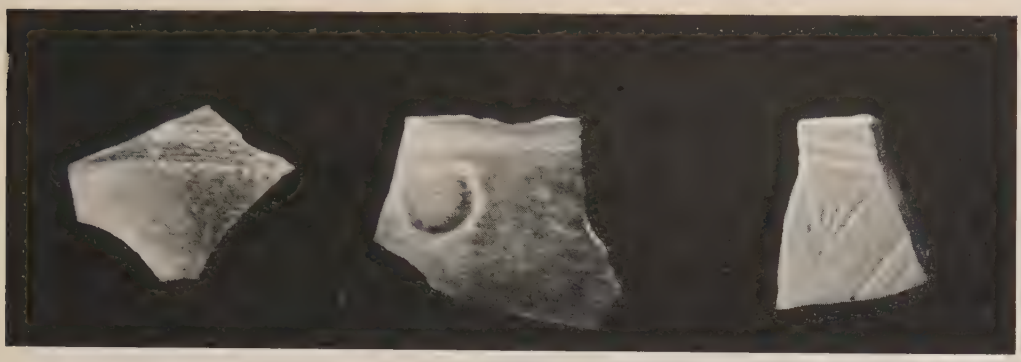

4 5 6

DANUBIAN POTTERY FROM BOEOTIA AND PHOCIS.

1–3. Burnish-decorated; 4. Ribbed and "beaded"; 5. Knobbed; 6. "Schnurkeramik."

7

INCISED "LEGS" FROM DRACHMANI.

and Danubians prevalent in Phocis and Boeotia, and intermingled with the aboriginal element in Northern and Central Thessaly.

The conditions immediately preceding this final division of the country remain unknown; neither is it as yet possible to indicate the actual homeland of the newcomers with any precision. But it is clear that the movement which brought them to the south, originated far outside the regions with which we are concerned, and that, in fact, all through the Danubian region a pressure from the north was felt and yielded to. For towards the end of the period of settlement which we have just sketched, a third kind of ware appears—though only in the north of Thessaly, and further north in Vinça—which originally is entirely foreign to the southern part of the Danubian region but at home on the Middle Danube, in northern Hungary, Lower Austria, and Moravia. These are the "crusted wares" (Γ 1 γ and Γ 1 δ), which are technically identical with those from Lenglyel and from Moravian and Lower Austrian sites, as Mr. Childe has established.[1] They form the so-called "Third Thessalian Period": however, this period is hard to separate from what goes before and from what follows, and, in fact, only at Rakhmani, in the extreme north, can its characteristics be distinguished with any clearness at all.[2] Consequently we may consider it historically the last phase of the north to south migrations. The makers of these Middle Danubian "crusted" wares naturally arrived south of Olympus later than those of the Lower Danubian black wares, neither could the Middle Danubian people penetrate very far, as they found their southern relations as well as their former eastern neighbours already in possession of the land. Their arrival marks the end of the period of upheaval in the peninsula, the settlement having already begun in Greece proper. The intruding "crusted" wares only shows definitely that the cause of this movement is to be sought far towards the north, and it may perhaps be found in an invasion of "Nordics" from the South Russian Steppes through the Black Earth Region into the districts of the Upper and Middle Danube,[3] an invasion which stirred up these populations and set them moving towards the south-eastern lands, which now for the first time take a more prominent place, if not in the actual economy, at least in the attention of these Central Europeans, by reason of an increasing, though still intermittent, traffic ultimately radiating from Western Asia.

Thessaly III.

[1] *Journ. Hell. Stud.*, 1922, p. 275. Note also the appearance of the Danubian feature of ornamental knobs stuck on the greatest width of the vessel (Tsountas, loc. cit., pl. xii, 3; Wace and Thompson, loc. cit., pl. iv, 4), which, moreover, is also found on the corresponding crusted wares on the Middle Danube (see above, p. 27), *i.e.* Palliardi's second class.

[2] Wace and Thompson, loc. cit., pp. 254 sqq. The Third Period has become yet more hazy since it is certain that the black carboniferous Γ-wares belong really to the Second Period, and Γ 1 β to the First (see *Catal. of Greek Vases in the British Museum*, i, 1, p. xix; and especially below, p. 47, n. 1).

[3] Childe, *Dawn of European Civilization*, p. 185.

Vinca.

Vinça again exemplifies this course of events extremely well.[1] The deepest layers, 9·50 metres below present ground level, with irregular *bothroi* marking the dwelling-places, have no copper, but black Danubian pottery burnished or ribbed, and already rough female statuettes. At 8·20 metres depth appear the anthropomorphic vases pointing to Troy[2]; and in fact we find them again between these two sites at Gradac, on the bank of the Morava.[3] At 7·50 metres depth copper is found for the first time, and at about 6 metres the bothros-stratum ends, and though there is no break in the continuity of the civilization, one finds new phenomena, pointing to reinforced influences either from the north or from further down-stream. The houses are now built on a rectangular ground plan, with flat floors and beam-supports. Obsidian appears, probably from Hungary, and also harpoons and fish-hooks of stag-horn, unknown to Butmir but always freely used in the Black Earth Region. Meanders

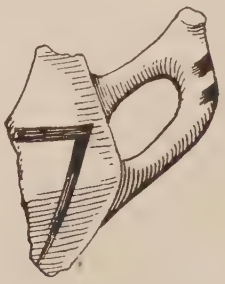

FIG. 10.—Handle from B3δ ware, Northern Thessaly.

and spirals adorn the pots, some definitely pointing eastwards,[4] but most of them with Danubian ancestry.[5] Then at 4·60 metres depth the Asiatic influences definitely come to an end; the anthropomorphic vase is no more found. Some crusted wares[6] show what is the cause of the change: the Danubian element is strengthened again, the European character asserts itself completely.[7]

Macedonia.

Thus at Vinça and in Thessaly the crusted ware serves as an index of final reinforcements received by the Danubian elements; with the same function it appears in the intermediate region, *i.e.* in Macedonia. But it is very rare there and in fact only found at Kapoudjilar and in North-western Chalcidice.[8] But much more nume-

[1] Vassits in *Annual B.S.A.*, xiv, pp. 319 sqq. *Praehist. Zeitsch. II*, pp. 23 sqq.; iii, pp. 126 sqq.

[2] *Vide supra*, p. 36, n. 1.

[3] "Glas," of the Royal Serbian Academy, 1911, pl. xvii, 44.

[4] See above, p. 39 sq.

[5] *Praeh. Zeitschr.*, ii, pl. xiv.

[6] Ibid., pl. 15a. These were already identified by Prof. Vassits with the Thessalian "crusted" wares.

[7] In contrast with the distinguished excavator of Vinça, I do not consider that important junction of two large natural roads to be characteristically part of the periphery of a south-eastern civilization, but a meeting-place of eastern and northern influences, the latter of which finally predominate.

[8] Rey, loc. cit., p. 234, fig. 34.

ous are other Danubian elements which we observe in this period, though a number f them may go back to the earliest Macedonian civilization ; here we cannot yet see learly. These signs are in Macedonia, the appearance of incised spirals of the continuous linear type[1] ; and of "wishbone" and "raking" handles of the Danubian egion,[2] and of a peculiar pressed-in triangle ornament (Kerbschnitt), found in the ame region again,[3] and entirely foreign to Asia or the Southern part of the Balkan 'eninsula at that early date. The earlier and the later Danubian population of Iacedonia is thus very roughly characterized by the "groupe A" and "groupe B" f M. Rey, the first containing the carboniferous wares and the latter the "Style incisé No. 2," which shows most clearly the new Danubian features of spiral and Kerbschnitt."[4] Thus Macedonia appears as a region originally belonging to the Danubian province, then passed but only slightly affected by a wave from the Black Earth Region (which lastingly influenced Thrace and North-eastern Thessaly) nd next receiving a new influx of Danubian peoples, a consequence of the oncluding movement of the great migration.[5]

[1] Ibid., fig. 32 and pl. xv, 2 ; xvi, 2 ; *Catal. Greek Vases, Brit. Mus.*, I, 1, 20, A94, 1 and 3. *Antiq. Journ.*, 1926, pl. xl. Both in the Danubian region and in Macedonia the spiral is ometimes drawn in such a way that the lines consist of intermittent impressions. Mr. Casson alls his find from Kilindir "Cycladic" (*Antiq. Journ.*, x, 1), though he has otherwise observed arious resemblances with the Danubian region, which, however, he dates much too late *Archaeologia*, lxxiv, 83 sqq.), *vide supra*, p. 31 sqq., and *infra*, n. 5. See also the early appearance f the spiral in the Cyclades, p. 50, n. 1.

[2] On the "raking" handles, see below, p. 51, with n. 1.

[3] Rey, loc. cit., pl. xv, 1-3, 78 ; xx, 5, 12, *Zeitschr. f. Ethnol.*, 1905, p. 102, figs. 41–43. *Catal. Greek Vases, Brit. Mus.*, A92, 5 ; A94, 3. It is necessary to distinguish these pressed-in triangles rom the ordinary punctated ornament, though the latter, when executed carelessly often shows ots of a somewhat triangular shape, the implement not having been pressed in at right angles. The ornament we discuss at present is a very special and locally well-defined phenomenon. Ir. Forsdyke's equation with Thessalian ware (*Catal. Brit. Mus.*) is not correct, but there are lear examples at Tordos, *Zeitschr. f. Ethnol.*, 1903, p. 452, fig. 34) and from Bosnia (*Wiss. Mitth. us Bosn. u. Herç.*, 1896, p. 15, fig. 31, 32 ; cf. ibidem, p. 45, figs. 50-52 ; further from Mondsee Austrian Alps), Hoernes, *Urgeschichte der Bildenden Kunst*, 339, 7, and from Broos (Transylvania) in the Ashmolean Museum. In Northern Europe it is very common.

[4] See below, p. 50. "Groupe B," however, contains very heterogeneous material, and overs, moreover, many centuries, down to Mycenæan times. One particular type of spiral esign remains obscure in its affinities. It is produced by roughly scratching out a band design n the pot-surface, which afterwards is entirely filled in with white (*Liverpool Annals*, xii, pl. xiv, 3. *eitschr. f. Ethnol*, 1905, p. 107, figs. 67-72 ; *Annual Brit. School Athens*, xxiii, pl. ii, 1-5 ; *Catal. reek Vases Brit. Mus.*, i. A76, cf. Rey loc. cit., pl. xvii, 1 ; xix, 7). This peculiar technique is anubian ; *e.g.* it appears in Moravia together with the earliest painted ware : Palliardi, *Wiener raeh. Zeitschr.*, i, p. 260. The horizontal S-spiral is originally a common possession of the anubian and the Black Earth Region (see above, p. 25, n. 1), but it may be here a simplification f the Danubian spiral-belt. As such we shall also meet it in Crete, and it appears also elsewhere n the Danubian region, *e.g.* at Butmir (Radimsky, loc. cit., ii, pl. vi, 3).

[5] The appearance of wish-bone handles in the Third Thessalian Period only cannot duce us to separate these in Macedonia from the great migration in the beginning of the Copper ge, because the evidence from Boeotia and the Cyclades, as we shall see, definitely proves the ntrary at least for the wish-bone handles, and Mr. Heurtley's most recent excavations

It is possible that, if not the Peloponnesus, at least all the mainland north of th Corinthian gulf up to the Adriatic was Danubian, but whether from the beginning c only since the migration we cannot say. The only site excavated in Aetolia, Thermo produced the "raking" handles in the oldest layers: but these were still Mycenæa *i.e.* late Helladic I at the earliest. But more definite evidence comes from Leuka where in the "Neolithic" cave deposit of Chirospilia these "raking" handles occu alongside various wares which we shall soon have to discuss, and with "knobbed ware identical with that from Orchomenos, and further with these solid feet of bow in thin-slipped red ware which are such a curious feature in the early layers Vinça.

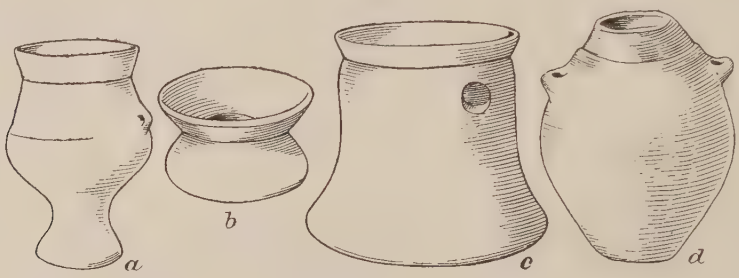

FIG. 11.—Shapes of Transylvanian pottery.

Corinth. South of the Corinthian gulf we find at least near Corinth and in the Argol signs of Danubian predominance in the First Early Helladic Period. The careful observed stratifications at Corinth and Korakou have shown that a highly polish ware, sometimes decorated with incised belts of running spirals, prevails.[1] And the Museum at Nauplia there are not only some sherds with "Kerbschnitt" fro Mycenæ, but also carboniferous ware, characteristically Danubian, which was fou at Tiryns (Pl. III, 2, 4). Some of this ware is ornamented with dotted whi filled ribbon-designs, and in one case these even enclose a small knobbed hand in the purest "Rahmenstil."[2]

in Macedonia (*Antiq. Journ.*, January, 1927), where he found them in very deep lay proves their early appearance also for Macedonia. What happened was apparently this: eit because of its seclusion or because of the predominance of the aboriginal population mixed w immigrants from the Black Earth Region, the Danubian civilization could not at first aff Thessaly at all. Its black wares are found only sparingly (*vide supra*, p. 44), while we sh soon note its influence in Boeotia and on the islands. The appearance of the crusted wares Thessaly and of the painted wares of Lianokladi III which descend from a Macedonian fa (*vide infra*, pp. 172, n. 6; 176, n. 3) proves the existence of a *subsequent* southward movem from Macedonia into Thessaly, which did not pass beyond the Spercheios valley.

[1] See above, p. 44, and Blegen, *Korakou*, 14; 5 with fig. 3.

[2] *Photo. Deutsches Archaeologisches Institut*, 15365 (Pl. III, 2). Compare Hoer *Urgeschichte der Bildenden Kunst in Europa*, p. 339, 8 (from Mondsee). Exactly such a knob handle is in the British School at Athens, in B 3δ ware, from North Thessaly (site 4) (fig. 10); others are known from Tordos (*Zeitschr. f. Ethnol.*, 1895, p. 127).

Cyclades.

The effects of the great migration are not confined, however, to the Greek mainland; some of the most peculiar features of the Island culture are, in fact, of Danubian origin. This may be revealed by some unexpected resemblances in shape between Danubian and island vessels: certain pyxides from Naxos have a parallel in Transylvania[1] (fig. 11, *d*), as well as the bulging vessel with conical foot[2] (fig. 4, 4 *a*, and 11, *a*), though one has to admit that in the case of the latter the coalescence of roundish vessels with originally separate stands may independently have led to similar results; but while on the islands otherwise identical vessels occur with and without the high conical foot, separate stands are not found there and do occur in

Fig. 12.—Pottery from Butmir.

Transylvania, as we have seen (fig. 11, *b*, *c*) where the complex type may thus have originated. Entirely conclusive evidence in this respect is, however, supplied by the well-known "frying-pans." On them we find bands of incised spirals of thoroughly Danubian character[3] (Pl. VI), and in fact certain sherds (Pl. II, 11, 15, 16) from Butmir[4] and Transylvania[5] show the identical design of "frying-pans" from Euboea and Naxos[6] (Pl. VI, 1–3). In the Cyclades this original motive only survives in a minority of cases. The mass of the material, from Syros, shows signs of industrialization: figures stamped in with a die take the place of the skilful and delicate drawing. Consequently the spiral, which with its continuous coiling and

[1] Athens National Museum, No. 6100 (3 specimens, one of which in *Comptes Rendus du Congrès international d'archéologie, Athens*, 1905, p. 218, second from right), and Dolgozatok, loc. cit., fig. 50.

[2] Dolgozatok, loc. cit., fig. 36 (our fig. 11, *a*) with *Ephem.*, 1898, pl. viii, 4; cf. Papabasileios, loc. cit., pl. vii, 3, in black ware. At Butmir, Radimsky, loc. cit., ii, pl. vii, 3 (our fig. 12, *c*) the same shape and curving vertical ledges occur as the Early Cycladic stone vases, e.g. *Ephem.*, 1898, pl. x, 16, 17, show; and such ledges occur elsewhere in the Danubian region, *e.g.* Wosinsky, Hengyel, pl. xv, 100.

[3] *Ephem.*, 1898, pl. ix, p. 16 (Syros). Papabasileios, loc. cit., fig. 14 (Euboiai), Athens, Nat. Mus., No. 6140 (three fine specimens (our Pl. VI, 1–3), one of which in *Comptes Rendus Congr. Int. d'Arch.*, 1905, p. 218, from Naxos).

[4] Radimsky, loc. cit., pl. v, 3.

[5] *Zeitschr. f. Ethnol.*, 1903, fig. 24.

[6] See n. 3.

uncoiling movement is essentially the draftsman's product, is replaced by the typically static design of groups of concentric circles, loosely connected by tangents. We even possess a few transitional dies with spiral motives.[1] The process may have been furthered by the concurrent use of pressed-in triangles ("Kerbschnitt")[2] (Pl. VI, 3), and for some time stamped or pressed-in designs occur on various kinds of vases.[3] The "Kerbschnitt," appearing commonly on the same vessels which show concentric circles or spirals, is in itself a further proof of Danubian elements in the island civilization, just as it was in Macedonia,[4] and so are the handles of the "frying-pans"; the two-tanged variety of the standard product from Syros is no doubt a peculiarly Ægean device. But other types survive alongside with it, "horned" or "raking" forms, in Naxos, Euboea, and Andros and they clearly belong to a large family of elaborate handles which is, from Neolithic times onward, at home in the southern part of the Danubian region.[5] Among the oldest Danubian pottery of Macedonia we find on the one hand forms which recur at Butmir and similar sites, and on the other

[1] *Ephemeris*, 1899, col. 87, figs. 12–14. Also on a pan from Andros in the Brit. School of Archæology at Athens, where the stamped-in spirals are *not* connected by tangents (our Pl. VI, 4). The radical simplification to concentric circles is more satisfactory, being more in keeping with the new technique. Of course, not every stamped design need be younger than every drawn one, as local differences tell as well. But the main course of events is clear, and cannot be theoretically reversed; as the *stamping* of concentric circles could never lead to the discovery of the coiling movement of the spiral which is essentially the draughtsman's product, or, if it is applied in relief, derives from a technique using "appliqué" threads or wires (goldwork embroidery). (See above, p. 27, n. 1, and below, p. 116.) Moreover, there is some objective evidence the stone pyxis from Amorgos with applied spirals (*Athen. Mitth.* 1886, 18, and Beilage I, No. A 4 must belong to the First Early Cycladic Period, as Amorgos seems not to have been inhabited in the Second, to which, as we shall see, the "frying pans" with stamped designs belong. This shows, of course, the priority of the spiral, which, however, is already beyond doubt established on the strength of the very nature of that design.

Finally, it must not be forgotten that the spiral may have been in common use without any evidence of that fact having come down to us. The Amorgos pyxis is a fortunate instance where such evidence is saved. But who knows whether on garments or as decoration painted on the body spirals were not widely spread through the islands while the potters were making their simple "herring-bone" ware? We have from Central Europe pintadera's with spiral-designs which were possibly used for the painting of the body, a practice which we know to have existed on the islands. (Wolters, *Athen. Mitth.* 1891, 46 sqq.). About the impossibility of synchronizing the layers in the different regions in which the spiral happens to appear to us for the first time *vide supra*, pp. 32, n. 4; 50, n. 1; 119; 140.

[2] *Ephemeris*, 1899, pl. IX 10, 23; 1899, cols. 86–7, and pls. viii, 1, 9, 12; ix, 4. See also *Athen. Mitth.*, 1913, pls. vii, viii.

[3] *Ephemeris*, 1899, pl. viii, 9, 10; ix, 15, 24; Papabasileios, loc. cit., pl. viii, 6. The same ornaments, viz., "Kerbschnitt" and spirals appear also in conjunction on stone vases and seals (*Athen. Mitth.* 1886, Beilage I, A 1, A 4., cf. Bossert, *Alt Kreta*[2] fig. 32).

[4] *Vide supra*, p. 47, n. 3.

[5] See *e.g.* Hoernes, in *Mitth. de Praehist Komm.* 1893, sqq. Glasnik zemalskog Muzeja Bosni i Hercegovini VI (1894), pl. i. For certain Neolothic types, see *Wiss. Mitth. Bosn. Herc* p. viii, 16, and Radimsky, Butmir, i, p. 19, fig. 39.

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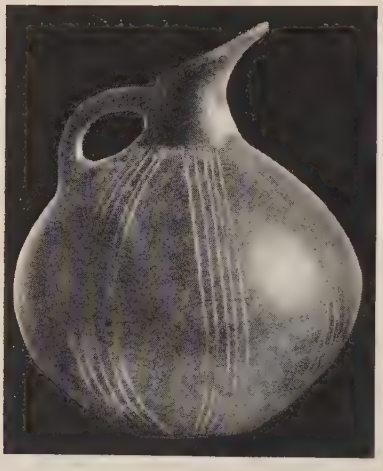

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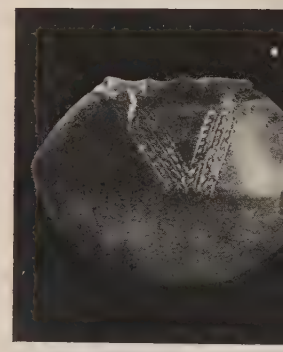

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CYCLADIC POTTERY FROM SYROS AND NAXOS.

Scale about

types which are closely paralleled in Euboea[1]; the Macedonian "chisel-handle" and the "bridged-over" type, which, together with the ordinary "ansa cornuta" is typical of the Danubian invaders who in Italy founded the "terra-mare" culture.[2] When we see finally that in Macedonia there is both traditional and archæological evidence that pile-dwellings were built by the aboriginal population,[3] and when we observe further that the strong Danubian centre in the Kephissos plain produces in peculiar local ware, so that import is excluded, just the same types of "raking"

[1] Rey, loc. cit., 195, and n. 42 *infra* for the "anses à tenon." Cf. *Antiq. Journ.*, 1926, pl. viii, p. 3, with Radimsky, Butmir i, 19, fig. 39, and also Rey loc. cit., pl. i, p. 3 with Papabasileios, loc. cit., pl. xiii top row, and Rey, loc. cit., pl. i, 4, with the pan from Andros (our pl. VI, 4).

[2] Compare from Macedonia, Brit. Mus. A, 96, 1, with Peet, Stone and Bronze Age, in Italy, pl. vi, 4, 5, Lama cilindro retta. Ibid. No. 7 occurs almost identically in Macedonia; *Zeitschr. f. Ethnol.* 1905, p. 98, fig. 12, and also at Hagia Marina (see below). This type of handle is found in the Bronze Age village of Toscanella Immolese (near Bologna) (*Mon. Antich.*, xxiv, 251, fig. 18), together with another type which explains a Macedonian form: at Toscanella, we see a tubular support under a flat top-part, which is pierced above the tube (loc. cit. p. 243, fig. 10). In Macedonia, in the painted ware (*Zeitschr. f. Ethnol.* 1905, p. 100, fig. 19; *Catal. Greek Vases Brit. Museum*, fig. 29, 100, 1, (our fig. 20), and Casson, *Macedonia, Thrace and Illyria*, fig. 34), the tube has been flattened out and of the opening there remains but a little impression, round which the pot-hook spirals gather. The same two types of handles appear in conjunction at the "Caverna di latronico" (*Mon. Antich*, xxiv, p. 498, fig. 25). The assumption that a Danubian prototype underlies the Macedonian and Italian examples is in the case of those with the flat top-part particularly confirmed by the fact that Hub. Schmidt has published late examples from Hungary and Bosnia (*Zeitschr. f. Ethnol.* 1905, 112, figs. 86–90) which represent local survivals of that supposed prototype. They are *late* not only typologically: we shall see that the Macedonian type appears in Asia Minor before the middle of the Second Millennium B.C., while the VIIth city at Hissarlik only provides parallels for the Hungarian and Bosnian specimens.—See also Peet, loc. cit., pp. 358, 388; 506–510, for the Danubian origin of the Italian phenomena. Note that also in Moravia some Bosnian type of "ansa cornuta" appears together with other signs of intensified intercourse with the Southern Danubian region (see above p. 34, with n. 7). and another variety closely related to our pan-handles, is found in the only part of the Black Earth Region, for which intercourse with the Danubians is certain, viz., in Transylvania, at Priesterhuegel (*Teutsch, Mitth. Praeh. Komm.*, 1903, p. 372, fig. 43; p. 383, figs 50, 51). The "bridged-over" handle presents a parallel case: it is found in Bosnia (e.g. *Wiss. Mitth.* 1893, p. 42, fig. 5; p. 45, fig. 8; Radimsky loc. cit., ii, 32, fig. 30), in the Italian Terra-mare (*e.g.* Hoernes in *Mitth. der Praehist. Komm.* 1893, p. 97, figs. 13–5), and in the Euboean tombs (Chalkis Museum, a buff cup with the handle "bridged, over"), and also in Macedonia (Rey, loc. cit., p. 197, "anses à tenon"). We shall see it appear later on, with "raking-handles" and other signs of a very limited northern invasion in Thessaly and at Thermon. Horned projections and other elaborations of handles occur, of course, elsewhere as well, and especially Cyprus shows occasionally some form similar to those with which we are dealing. But Cyprus is so wholly unconnected with the Greek Mainland in the period under discussion, that this isolated feature has to be explained as a result of independent development. The parallels from the Danubian region on the other hand, fit in with the other material adduced in this paragraph to form a consistent picture.

[3] Rey, loc. cit., 246. Besides Herodotus's graphic description of a lacustrine settlement in Lake Prasias, there is some further traditional evidence now compiled by Casson, *Archæologia*, lxxiv, 83 sq., and *Macedonia, Thrace and Illyria*, p. 140.

handles (Pl. III, 3 and fig. 13)[1] as we find in Italy, Priesterhuegel, Macedonia and the Cyclades, then we are obviously obliged to claim for the whole of this morphological group a Southern Danubian homeland from which it spread at various times to east and west, even if not every single variety of these is known in an early context.

We find therefore in the peculiar organism of the Cycladic civilization, alongside with what we shall soon recognize as Asiatic in origin, a very noticeable Danubian legacy. Thus, having completed our survey of Danubian influence in the earliest Metal Age of Greece, we return to the consideration with which we, anticipating the inquiry just concluded, closed our paragraph on the immigrants from the Black Earth Region—the consideration namely, that the two components of the great migration were of very different importance for the country's further development.

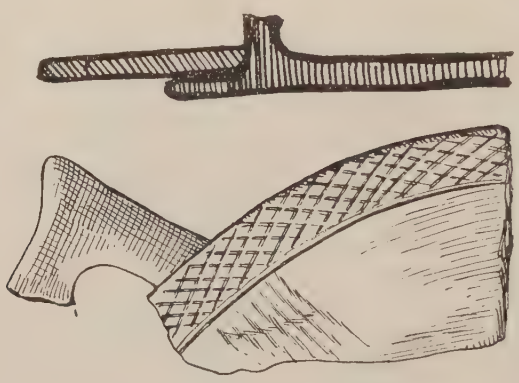


FIG. 13.—Fragment of a "frying-pan" from Drachmani.

The outstanding and all-important fact of the period is the cultural and commercial intercourse which increases with the spreading of the Copper Age from Western Asia. This momentous event affected most deeply the inhabitants of the great river-valleys between the Mediterranean and Carpathians, and pressing southwards on the roads just opened up, these Danubians reached the Ægean and established, mixed with aboriginals, strong and flourishing centres in Phocis and Boeotia. From there the district of Corinth was within easy reach and, on the other hand, Chalkis, built on the spot where the Euripos is easiest to cross, may well, as its name indicates, have gained in those remote times of earliest metal trade the importance it was to retain down to the days of Athens. The islands themselves, not able to maintain a population of any extent from their own resources, now became inhabited, as they

[1] Both in the Chaeronea Museum. The profile of our fig. 13, from Drachmani, shows clearly that it belonged to a "frying pan"; that from Hagia Marina (pl. iii, 3) bears the typical design of the site in the usual white paint on "Urfirnis." See p. 51, n. 2 for its parallels in the Italian "terra-mare" and in Macedonia.

ad to play their part in the traffic with the Asiatic mainland towards which they retched in an almost unbroken chain, the centre whence the epoch-making innovation ad spread. And while the descendents of the Tripolje immigrants, whose remains ave till now exclusively drawn the attention of investigators, continued in the old tyle their secluded existence where they were left undisturbed, it is the Danubians, vho, in their truly epic meeting with Asia, appear now as the pioneers who open up he new epoch after the stagnant Neolithic Age.

¶ 8. Before we turn to Asia it remains to devote a few words to the Neolithic remains of Crete. The " Tell " of Knossos, with its 25 feet of accumulated Neolithic debris, illustrates perhaps better than any other site the immutable vegetating life with which humanity, slowly accomplishing and assimilating the fundamental advances on the Palæolithic Age, prepared itself as it were, for the cultural development which was to follow.

Crete formed part of " an inert mass of indefinite extension "[1] which comprised Anatolia and all South-eastern and Central Europe. With those regions it shared certain ideas and material possessions, such as the occurrence of " mother goddess " statuettes[2] and the shoe-last celt[3] exemplify. The material of these celts, jadeite, serpentine, or greenstone, bears in several cases witness to that sparse and intermittent intercourse with more or less distant regions, which is also apparent from the occurrence of certain shells in Neolithic deposits far from their habitat,[4] and from the diffusion of obsidian,[5] an intercourse, however, which, then in contrast with the succeeding period, little affected the self-contained Neolithic communities. This intercourse can also explain the appearance at Knossos of a peculiar kind of pottery which seems wholly unconnected with the common Neolithic ware of Crete.

[1] Sir Arthur Evans, *The Palace of Minos*, i, p. 14.

[2] Ibid., pp. 45–52. Of the two Cretan types distinguished here, the squatting type seems peculiar to Anatolia ; the sitting type is paralleled in Europe, where otherwise a completely extended form, but never a squatting figure is found. Occasionally, however, one finds extended figures in Anatolia (*B.S.A.*, xvi, pl. xii, 18, 19).

[3] Evans, loc. cit., figs. 15, 1–5. For its occurrence in Europe see Childe, *Dawn of European Civilization*. In Western Asia it is found as far to the south as Susa I (*Mémoires de la Délégation en Perse, xiii*, 12, fig. 35, cf. 17, figs. 77–79). In Egypt it is of very rare occurrence, and is known apparently in the late predynastic period only (Petrie, *Prehistoric Egypt*, 24, and pl. xxvii). In the Metal Age it penetrates occasionally as far westward as Tunis (*L'Anthropologie*, 1912, 160, L).

[4] See the various instances in Evans, *The Early Nilotic, Libyan, and Egyptian Relations with Minoan Crete*, Huxley Lecture, 1925, p. 3, with n. 2, and *Palace of Minos*, p. 55.

[5] Most obsidian belongs to the Metal Age, but its occurrence in Neolithic deposits is well certified, and the wider distribution in the Metal Age is due to the extension of trade relations in that period.

The common Neolithic ware at Phaestos,[1] as well as at Knossos,[2] and in the East of the island,[3] is quite simple, with roundish shapes, mostly without handles[4]; irregularities in the firing lead to a red and black mottling of the surface, but the aim was apparently to produce black vessels. Æsthetic preoccupations of the potters become only manifest in the finish of the surface, which is well burnished throughout. And to attain the highest possible glitter and shine they eventually "rippled" the surface of their vessels from top to bottom by vertical strokes with the burnishing tools previous to the firing. The regular unevenness thus produced persisted, of course, when the vessels, fired and smoke-blackened, received their final polish. Thus the "rippled" ware, characteristic of the Middle Neolithic strata at Knossos,[5] but also found at Phaestos,[6] is in no way foreign to the scope of native Cretan tendencies; but it is, perhaps, not superfluous to state explicitly that this pottery has nothing whatever to do with the Danubian "ribbed wares," in which belts of definite decorative motives are applied on structurally important parts of the vessel. There we find *designs* carried out in a peculiar technique; but in Crete we have to deal with a special *surface treatment*, which naturally extends all over the pot. As such, we find "rippling" also applied in the recently discovered "Badarian" pottery in Middle Egypt. But the difference between this oldest Egyptian ware and that from Crete is complete from all other points of view, and the "Badarian" is clearly, and in all respects, the long-sought primitive stage which precedes the typical predynastic red-ware production. As this red ware in its different varieties is characteristic of the Nile Valley and not connected with anything foreign, it is impossible to relate solely its earliest known stage to Cretan pottery on the strength of a single technical characteristic which may easily appear wherever burnished pottery is made.

While thus the Cretan "rippled" ware appears as the perfection of a purely local product, the incised pottery found at Knossos in the same strata suggests a different explanation of its existence.[7] It is, like the ordinary Neolithic pottery in Crete, carboniferous; but the small open bowls with a sharp edge at their widest part,[8] fitted with handles and decorated with preponderatingly white-filled incisions,

[1] Mosso, *Monumenti Antichi*, xix, 189 sqq., and *Le origini della Civiltá Mediterranea*, 300 sqq. But Early Minoan and Neolithic are not well separated. *Origini della Civiltá Mediterranea*, figs. 30–32, are doubtful, for see Seager, *Mochlos*, fig. 48, Nos. 32–34; and in No. 32 was actually found copper (Evans, *Palace of Minos* i, 68). *Origine della Civiltá Mediterranea*, fig. 35, is certainly E.M.I.

[2] Specimens in the Candia Museum. I also picked up a few of these inconspicuous sherds on the site near the test pits.

[3] It forms there in its simplest forms the basis for the First Early Minoan development, see below, pp. 85 sqq.

[4] Mosso, *Le Origini*, figs. 15, 19, 20, 23–34.

[5] Evans, loc. cit., fig. 5; *Journal of Hellenic Studies*, xxiii, pl. iv, 6–14.

[6] Mosso, loc. cit., fig. 25.

[7] *Journal of Hellenic Studies*, loc. cit., 96.

[8] Evans, loc. cit., figs. 7, 11, 13, and numerous fragments at Candia.

re entirely unconnected with anything known in the island. On the other hand, hapes as well as designs[1] and handles—both the "wishing-bone" or "raking"[2] nd tubular handles with obliquely cut ends[3]—and finally suggestions of "Kerbschnitt,"[4] and the strongly tectonic character of the decoration link this pottery p with the Danubian wares, and it is not rash to presume that its production in rete was ultimately brought about by an extension of the Neolithic intercourse hich we discussed already up to the head of the Adriatic. It is evidently impossible o define any more closely the nature of this proceeding. Occasional contact or ome accident such as the drifting ashore of some northerners thrown out of their ourse by a storm, would suffice; for the common technical basis (black ware production) made it a simple matter for the Cretan potters to follow Danubian examples when they once reached them. On the European side there is no objection to such an explanation; on the contrary it is noteworthy that at Vinça, for instance, the spiral is not known in the deepest layers and there the designs are also devoid of white filling,[5] just as at Knossos we find originally rectilinear designs which later on become filled with white material.[6] And the limitation of the provenance of this incised pottery to the centre of the north coast of Crete corroborates excellently the view here expressed.[7]

It may seem strange that in our preceding account of the Neolithic civilization of Crete, Africa is not mentioned at all, while clear affinities to Europe are found. We might expect that in this early period just as in all those which succeed, there would be a strong Mediterranean strain in the island population, which might become manifest in African features within the earliest civilization. One has to admit the possibility that such features existed; for our material only gives us an insight into what is obviously a minute part of the structure of Neolithic culture. It may have happened that striking features, of dress for example, had a strong African tinge,

[1] *Journal of Hellenic Studies*, loc. cit., pl. iv, 17, 21, 28, 30; cf. *e.g. Praeh. Zeitschr.*, ii, pl. xiv, *b*.

[2] Evans, loc. cit., figs. 7, 1–7. Cf. Nos. 1, 2, 6 with those from Priesterhügel, *Mittl. Praeh. Komm.*, 1903, 383, fig. 49, and in the Candia Museum there are handles exactly like Rey, *Observations sur les premiers habitats en Macédoine*, pl. i, 2, 3. Vide supra, p. 51, n. 2.

[3] Evans, loc. cit., figs. 7, 9, 10, 12, 14. Cf. *Liverpool Annals*, xii, pl. xv, 23, 24, and also *Mitth. Praeh. Komm.*, 1903, 374, fig. 77, *b*, *c*, from Priesterhügel.

[4] Evans, loc. cit., fig. 8, 1. Vide supra, p. 47, n. 3.

[5] Vassits in *Prähist. Zeitschrift*, ii, 29.

[6] Evans, loc. cit. 36. See Part I, p. 7, on the fact that white-filled incisions are no proof at all of intercourse between the regions (which are almost innumerable) where they are used.

[7] For parallel cases, see below, pp. 95, 115. This pottery seems to have spread east along the north coast, though not in large quantities; wish-bone handles exactly like the Macedonian types are found at Magasà, near Palaikastro (*Annual Brit. School Athens*, xi, pl. viii, 27–29, and p. 264, fig. 3); but the incised ware is degraded to some (unfilled) dotted designs (ibid., pl. viii, 24–26). Another wish-bone handle is found at Sphoungaras (Edith H. Hall, *Excavations in Eastern Crete*, p. 47). In the Candia Museum there is one fragment with a belt of triangles, hatched alternately from left to right, the favourite motif of the Danubian "ribbed" ware. Cross-hatching, common in Asia but less common in the Danubian region, is not found in Neolithic Crete.

and we know even that such was the case in later times[1]; the Mediterraneans may further well have arrived without knowing the art of pot-making, as their homeland in North Africa provides in the esparto grass an entirely satisfactory raw material for all kinds of vessels, which even hold liquids; but the perishable nature of these remains would exclude their coming down to us.[2] That an African "layer" is found in Crete, Malta, Sicily, and the Baleares is also suggested by Prof. Schuchhardt's attractive explanation of the anomalous heavy-topped pillar of Crete by parallels from the last-named island. But there the more primitive form may have survived, and no chronological conclusion may be derived from the comparison, a conclusion which would entail the dependence of the Eastern Mediterranean on Spain and the West, which is contradicted by an overwhelming mass of evidence.[3]

As we have now completed the survey of our field of research such as it was before the epoch-making discovery of metal-working had affected it—and have even, for clearness' sake, occasionally described also events immediately following its introduction—it is now time to turn to the centre of diffusion itself and to consider the earliest remains of Western Asia.

[1] *Vide infra*, p. 97.

[2] *Vide infra*, p. 134.

[3] Schuchhardt, *Alt Europa*, 145–184, especially 149 sqq.; *vide infra*, p. 106, n. 9; p. 135, n. 5.

Chapter III.—Western Asia in the Copper Age.

The earliest pottery of Western Asia.

¶ 9. As we have seen already no Neolithic Age is known to us in Western Asia, and so the phenomena with which we have to deal present from the beginning a certain complexity; there is no comparatively simple, static, and self-contained civilization to provide us with a starting-point or a basis for comparisons. From the beginning we have to count with possible influences from abroad due to the intercourse of the earliest Metal Age; and thus we have to proceed with the greatest care.

At Hissarlik the deepest layers produced a black polished carboniferous ware decorated with white-filled incisions, which one has, at present, to consider the oldest Anatolian pottery.[1] It is not confined to the Troad; in Mysia it is common,[2] and Professor Myres has traced it eastward to Pontus and from there through Cappadocia to the Northern slopes of Taurus.[3] Three figurines found near Adalia,[4] the finds of Messrs. Ormerod and Westwood in Pisidia and Southern Phrygia,[5] and a group of Carian vases in the Antiquarium at Berlin provide the remainder of the evidence which entitles us to proclaim it a fabric common to all Anatolia. Sakjegeuzi in North Syria may even be mentioned as the southernmost point at which it occurs.[6]

Thus we find on both sides of the Northern Ægean black carboniferous wares in use, for, as we have seen, the "Danubians" touched on its northern shores in Macedonia and Thrace. And there is not merely a technical similarity between the ceramics on either side: in the decoration both Anatolia and the Danubian region uses a strongly tectonic arrangement and both use ribbon-like designs and, occasionally, plastic ornaments such as knobs,[7] and on both sides natural representations are absent

[1] *Vide supra*, p. 7, n. 2.

[2] Found at Yortan Kelembo (*Comptes Rendus de l'Académie*, 1901, 811, sqq.); on the Baghdad line between Panderma and Soma (cf. Wiegand in *Athen. Mitth.*, 1904, 287; Berlin Antiquarium, Nos. 30673–8); Ak Hissar (Thyatira) (*Annual Brit. School Athens*, xix, 56, fig. 4, *a–c*); Emed (*Journ. Roy. Anthrop. Inst.*, 1903, 370).

[3] The sites are: Bos Eyuk, Midas City, Gordion, Langania (Bey Bazar), Iconium, Ipsus, Adalia, Boghaz-keui, Marsovan, Zille, Orta Eyuk, Bulghaz Ma'aden (*Journ. Roy. Anthrop. Inst.*, 1903, 371–2). Further, there are unpublished fragments from Kara Eyuk in the Musée Guimet (Chantre).

[4] *Liverpool Annals*, ii, 145 sqq., and pls. xxvi–xxvii; *Journ. Roy. Anthrop. Inst.*, 1900, pl. xxiv.

[5] *Annual British School at Athens*, xvi, 89 sqq.; xviii, 80 sqq.

[6] *Liverpool Annals*, i, pls. xliv–xlvii.

[7] Originally those at Hissarlik do *not* imitate human organs like breasts, etc. This is a secondary use in the second city when "Gesichtsvasen" are used. Originally in the black ware one gets either continuous rows of knobs (*Katalog. Schliemann Sammlung*, 2342; *Annual British School Athens*, xviii, pl. v, 3, 4; vi, 4; vii, 13; British Museum, A35), or two knobs divide the surface between the handles with which they form four accentuated points in the circumference of the vessel; they are thus pure decoration, though *tectonic* decoration.

in the decorations of the pots. At Yortan one finds some theriomorphic vases which recall Thrace,[1] but in detail they differ. This is a characteristic of all the comparisons which we made : they only refer to very general features, hardly more definite than common principles in fact, and the way in which these are worked out is entirely different in one case and in the other.

The shapes of the earliest Anatolian and the Southern Danubian vessels diverge completely : large neckless piriform pots and small, thin-walled, sharp-edged bowls in the last case, plates with flat rims or globular jugs with long narrow necks in the first ; there an obliquely cut mouth soon develops into the beak spout, apt to assume fantastic dimensions and forms ; while the absence of spouted vessels is characteristic of Neolithic Europe.[2]

[1] See below, n. 9 *d*, and compare *Bull. Soc. Archéol. Bulgare*, vi, pl. iv.

[2] As, in contrast with the pottery of the later settlements, that of Hissarlik I and its homologues is hardly treated in detail, we may well add here a short account of its main types and show its unity all over the peninsula :—

(*a*) The BEAK-SPOUTED JUG starts simply as a jug the rim of which is slanting (*Katalog. Schliemann Sammlung*, 164a). As such it persists at Hissarlik II, at Bos Eyuk (*Athen. Mitth.*, 1899, ii 1), and in the interior of the peninsula (*Annual British School Athens*, xviii, pl. vi, 4, 6 ; vii, 6, 9, 11, all from Pisidia ; ibidem, xix, p. 56, fig. 4, though even there a "Schnabel" is found ; ibid., xviii, 84, fig. 3), but at Yortan, and then in Hissarlik II, it develops into different curious forms with very pointed outflow, or with "cut-away" neck.

(*b*) Different types of BOWLS (Dörpfeld, *Troja und Ilion*, 246, figs. 98–101). Two of these types are important (loc. cit., figs. 98 and 107), as they do not survive the First City. The last type is also found in Senirdje (*Ann. B.S.A.*, xviii, pl. vii, 8). That is also the case with the long tubular lug (ibid., figs. 105, 106), also known from Karagah Tepeh (in the Ashmolean Museum) and Caria (Berlin Antiquarium, inv. 3411). Vertically pierced, single or double lugs (Dörpfeld, loc. cit., figs. 102–104) are never found on bowls later than the First City.

(*c*) Related to the beak-spouted jug are the VASES WITH CYLINDRICAL NECK (Dörpfeld, loc. cit., Beilage 34, and *British Museum Catal.*, A45 sqq.), either covered with a circular lid with central knob or handle, or only having a short stright neck ; the last I call COLLAR-NECKED VASES (*British Museum Catal.*, pl. ii, A43 and 44) ; they had a domed cover (*stülpdeckel*) resting on the shoulder (*Schliemann Katalog*, Nos. 184–197). Both kinds of lids have two or four holes or lugs to be tied on to the vase (ibid., 171–184 ; *British Museum Catal.*, p. 9, fig. 15). The first variety is common at Yortan ; this type is in the Second City ornamented with a face either on the long cylindrical neck or else on the domed cover. The knobs now indicate navel and breasts, but they did not originate as such, and are a development peculiar to Hissarlik, and not found elsewhere in Asia Minor.

(*d*) Fairly common are "DUCK-VASES," differing from the Cycladic class of that name as well as from the theriomorphic vases. They only rarely show animal-features, and have generally an ordinary spout (mostly a beak-spout). They are known from Yortan (*Comptes Rendus*, 1901, pl. i ; *British Museum Catal.*, A31, 32 ; Berlin Antiquarium, inv. 3740 ; Constantinople Museum, inv. 3432), Ak Hissar (*Ann. Brit. School Athens*, xix, p. 56, fig. 4a), Bos Eyuk (*Athen. Mitteil.*, 1899, pl. ii, 5). Hissarlik II, which develops the anthropomorphic vases, also stresses the animal features in the "duck-vases" (*Schliemann Katal.*, 607), though the other type survives (ibid., 608, 1481).

Almost as great is the difference in the decoration of the fabrics which we compare. It is true that once again common features could be cited; in addition to the tectonic character of the decoration and the ribbon-like designs[1] we may mention that in both regions the opposition of surface to surface, obtained by hatching or dotting of background or design is occasionally found.[2] But I can hardly remember one or two decorated sherds which would not look perfect strangers in a European context. The Danubian spiral is of course absent in Anatolia; on the other hand we find there a predilection to arrange vertical ornaments round the shoulder of the vessel (Hub. Schmidt calls this "Hängeschmück")[3] which is foreign to the Danubian region where horizontal belts of ornaments are preferred.

Common technique, a similar artistic mentality, but a complete divergence of all details—there is only one way to account for these facts; we have to deal here with independent developments in each of the two regions on a common basis. And we may venture to suggest what that common basis has been, for both Anatolia and the Danubian area are the domain of "Alpine" man, the inhabitant of the "highland-zone," which, hardly interrupted by the "River Hellespont," is one single great region thrust westward into the heart of Europe from its Armenian summit.[4] And it might well be that one of the Alpine waves entered Europe in the possession of a

As Maximilian Mayer has shown, these vases are to be considered as Askoi (*Yahrb. d. Arch. Institut.*, 1909, 207 sqq.).

(*e*) The archæological seminary of the University at Berlin possesses a remarkable PILGRIM'S BOTTLE in this black carboniferous ware of exactly the shape which was to become so important in the Eastern Mediterranean more than a millennium after the period from which our example probably dates (see Pl. vii, 3). It was found somewhere in the "Hinterland" of Smyrna. A more or less related shape occurs amongst the rose-buff ware of the Hissarlik II stage found at Yortan, now in Berlin (Antiquarium, inv. 4399; cf. *Schliemann Katal.*, 631). The black pilgrim's bottle has four knob legs, which give important dating evidence, since three such knob legs are a common device in Yortan, to add stability to the vessel; we also find them in Hissarlik II.

(*f*) A vase which will be a most important indicator of influences radiating from Anatolia in later times, is also already known among the black wares: this is the VASE WITH A STRAINER-SPOUT, a narrow neck and a *handle at right angle* with the spout, so that the simple turning of the handle in one's hand effects the pouring (*Annual British School at Athens*, xviii, pl. vi, 3; vii, 3). It may have been used to pour out unclarified liquid (beer (?) see Koerte, *Gordion*, 34), or it may have served not for pouring out but for filling the bottle in such a way that dirt, leeches, etc., were kept out. The bottle could be immersed in such a way that the water entered by the strainer-spout on the shoulder while the neck remained clear of the water.

[1] Even the way in which the general idea of decorating with ribbon-like designs is worked out differs in the two regions. In the Danubian wares one often finds ordinary hatching at Tordos, Vinça, and Butmir, for instance; this never occurs in Anatolia, where a carefully executed cross-hatching is used. On the other hand, the Anatolian device of making a ribbon by enclosing rows of small motifs, *e.g.* lozenges, by two parallel lines, is never found in the Danubian region.

[2] *E.g.* Bos Euyuk, etc.

[3] Dörpfeld, *Troya und Ilion*, p. 275 sqq.

[4] Prof. Myres, in *Camb. Ancient Hist.*, i, p. 59.

certain knowledge of pot-making. For in addition to the common technique there is a common natural prototype for the shape of the pots ; in Anatolia these go definitely back to gourds, and the same is true of the *oldest* " Danubian " vessels.[1] Moreover, we get on both sides the common correlative of round-bottomed vessels, the pot-stand, and further shapes which come into being when pot and support coalesce, *i.e.* are made in one.[2]

The attentive reader will remember that we also considered the light-coloured earliest wares of Central Greece on stylistic grounds as a product of Alpine man,[3] but, as we have seen, there are traces which suggest that this early pottery of both Central Greece and Thessaly has, again, been derived from carboniferous wares.[4]

If, finally, we recall that in Crete, which received its earliest population most probably from Anatolia,[5] we find from the very beginning black carboniferous wares in use, it certainly seems sound to assume that when Alpine man spread westward from Anatolia he already possessed the requisite knowledge for the production of black carboniferous pottery. That in each of these different regions the subsequent development, the alternative adherence to black ware or red ware technique, the shapes and the designs would go entirely their own way is only to be expected from what we know about the character of Neolithic communities. The whole subject of the subsequent similarities, based on an identical starting-point, and of the differences caused by independent further growth, pertains obviously to *anthropological* and not to *historical* archæology.[6]

In contrast with the general similarities discussed above, there are a few of a very special character ; they are exceptional in the large mass of material, and may be due to the intercourse which characterizes the earliest Metal Age. We have seen in the preceding chapter how the spreading of copper-work from Western Asia was

[1] Schuchhardt, in *Praeh. Zeitsch.*, i, pp. 51–2. Holwerda, *Die Niederlände in der Vorgeschichte Europa's*, pl. ix. I only endorse the statement as far as the *shapes* are concerned. Adama van Scheltema (*Die Altnordische Kunst*, pp. 83-99) has definitely shown that such an explanation does not apply to the spiral decoration.

[2] See Hubert Schmidt, in *Zeitschr. f. Ethnol.*, 1904. p. 654, figs. 26–34. Again this similarity is of a *general* character, for the European " fruit-stands " and the Anatolian calices for instance, are related to one another as a bucket to a tumbler. In Anatolia we have no actual pot-stands, unless we count such vessels as Schliemann, *Ilios*, 1185, and Schliemann, *Katal.*, 263-266, which presuppose their existence, at least for an earlier period. Dr. Andrae has actually found them in Mesopotamia (*Die Archaischen Ishtar Tempel.*, 41 sqq. ; c.f., Part I of these Studies, p. 128). Cf. also the vessels with high hollow foot at Vinça (*Memnon*, 1907, pl. vii, 35, printed upside down).

[3] *Vide supra*, p. 14.

[4] *Vide supra*, p. 11 sq. Thessaly is not the only instance of this transition ; in the " Danubian " region, in Moravia, the same happens (*vide supra*, p. 27), and we find red wares in the later stage of Butmir and even, in the special case of calices with solid foot, at Vinça (p. 35, n. 1).

[5] Sir Arthur Evans, *Huxley Memorial Lecture*, 1925, p. 1.

[6] *Vide supra*, p. 1. I do *not* want to suggest that the bearers of the Danubian civilization are " *Alpine* " throughout ; there is ample anthropometric material which suggests a mixture of races. See p. 25, n. 1. Childe, *Dawn of European Civilization*, p. 176 sq.

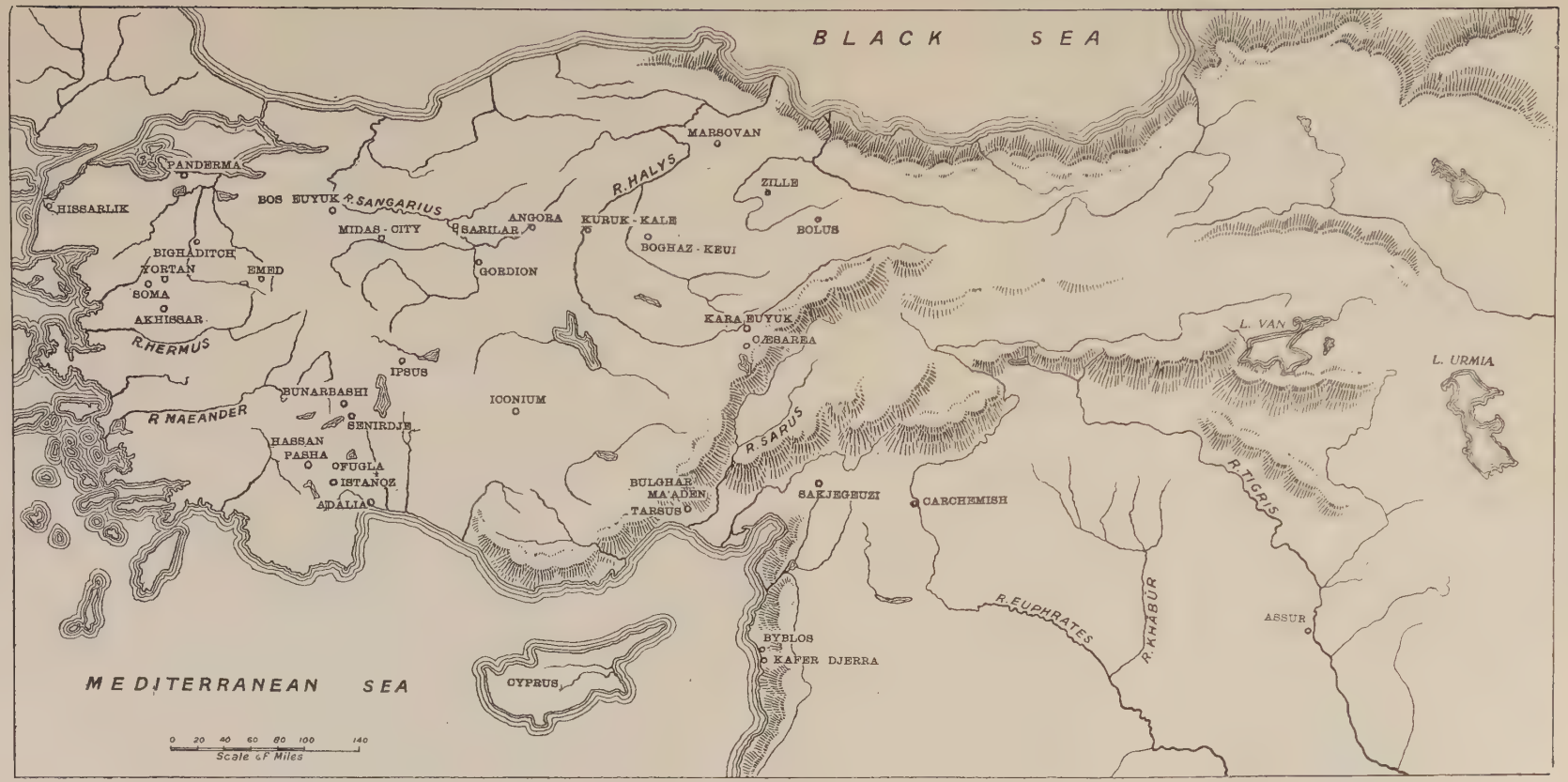


FIG. 14.—Index Map of Hither Asia.

followed by a migratory movement from Central Europe along the river valleys and the shores of the Ægean. Is it possible that we may find now, on the Asiatic side, traces of contact with those new-comers across the waters ?

In Asia we find already at a very early period "burnish-decorated" ware[1]; like the "rippling,"[2] this burnish-decoration may at any time be "discovered" (and thus occasionally utilized) wherever burnished pottery is made; it proves no contact between the regions where it is found. But certain fragments from Besika Tepeh[3] show not the large cross-hatched surfaces of the other Asiatic specimens, but neat narrow bands with parallel lines like those from Orchomenos (Pl. IV, 1). Do these few fragments point westward ?

The same question is raised by some vessels on which the decoration is applied to the black polished surface with white paint. At first sight one would like to claim that specimens of the white-painted Danubian variety, together with burnish-decorated ones, reached the Asiatic shore and created a short-lived vogue there. It may be, however, that some Mysian potters chanced independently on the idea. For the painted Anatolian vessels show neither in shape nor in decoration a single trace of Danubian influence. At Hissarlik there are some bowls of that type which is peculiar to the deepest layers[4]; at Yortan,[5] Panderma-Soma,[6] Emed[7] there are the ordinary beak-spouted jugs, decorated with a white design. And with one exception,[8] the decoration is identical in *all* cases: it is a zigzag of four parallel lines, a motive of which Mr. Ormerod has proved the purely Anatolian character,[9] and of which the incised counterpart is shown as well.[10] Also the painting is executed in all cases with the meticulous care with which a new invention is carried out. We cannot therefore decide whether importation or local inventiveness is responsible for this new technique. Anyhow, the fashion remained without subsequent development; it is only found in a limited area (Mysia), and it disappears without leaving a trace. Thus, even if it were, with the sherds from Besika Tepeh, a symptom of intercourse with the Danubian region, it would only show again that Europe's influence on Asia was not effective in this period. Much stronger was the expansion of Asia towards Europe, which went hand in hand with the spreading of copper-work. Here, again, the pottery will be

[1] See for references, Part I of these "Studies," pp. 106 sqq.

[2] *Vide supra*, p. 54.

[3] Dörpfeld, *Troja und Ilion*, p. 546, fig. 467.

[4] Dörpfeld, loc. cit., p. 252.

[5] *Brit. Museum Catal.*, A58–60; Berlin Antiquarium, inv. 4454; also in the Louvre and in Constantinople.

[6] Berlin Antiquarium, inv. 30673-4.

[7] *Journ. Roy. Anthrop. Inst.*, 1903, p. 374, fig. 4.

[8] In Constantinople; to the ordinary motif a cross-hatched triangle is added.

[9] *Ann. Brit. School, Athens*, vol. xviii, pp. 89–91 and figs. 4–8, in keeping with the view of Prof. Schmidt that "Hängeschmück" has originally given the prototypes for the ceramic decoration in Western Asia Minor.

[10] Ibid., pl. vii.

1

2

3

4

PANS FROM NAXOS (1–3) AND ANDROS. Scale about 1 : 3.

our guide. But before we actually investigate the eventful meeting of East and West in the Ægean we have to concentrate on the development of Anatolian ceramics: for just in this period it passes through a momentous and rapid evolution; and the almost contemporaneous existence of its various stages would be very apt to confuse us, unless we are warned what to expect.

Black ware and red ware.

¶ 10. In that period which lies between the desertion of Hissarlik I and the founding of Hissarlik II—for notwithstanding some obscure survivals,[1] it is clear that the two cities did not succeed each other without a break[2]—in this intermediate period an important change in Anatolian ceramics was brought about. The pottery of Hissarlik I was black throughout: that of Hissarlik II shows brownish hues; and though it is a product of a lower grade, rather carelessly manufactured, it proves nevertheless that the production of black ware is given up, and that, in principle at least, firing in an oxidizing atmosphere, and therefore the production of red ware, is adopted.

Have we to postulate foreign influence at the back of the change? Hissarlik, where the evidence shows a break, could not enable us to answer the question; but we have fortunately at our disposal the rich material from Yortan, which, as we shall see, just bridges the gap, and a certain amount of material from all over the peninsula as well, so that we may at least attempt a solution.

In the introductory chapter of these "Studies" we have discussed what the conditions for black- and red-ware production are.[3] And it follows from what we saw there that the first may easily lead to the second if the potters are enterprising enough to experiment and to investigate the phenomena which present themselves in the ordinary course of their occupation; one may not find such a spirit prevailing in the primitive communities of our days, but one has a right to expect it in those young centres from which our cultural evolution itself sprang.[4] And the evidence shows[5] that we do not expect it in vain.

The pottery with which we have to deal here was probably fired in a sort of ditch, or perhaps there was even no more complicated appliance than a mixed heap of pots and fuel, which, covered over with grass or clay would, in its slow combustion, with little access of air and much smoke, led to the result which was required. Some unevenness in the covering of the pile, or in the distribution of the fuel, or the use of very dry combustibles would here and there create an oxidizing atmosphere,

[1] Hub. Schmidt, in *Katalog Schliemann Sammlg.*, p. xiii, 2. Pottery similar to that of the First City is found "ziemlich tief im Zusammenhang (above? underneath?—H.F.) mit einem vor die hinterste Burgmauer gelegten Pflaster."—Less equivocal are Schliemann's remarks (*Bericht*, 1890, 21), but in the absence of references they can neither be checked nor elaborated.

[2] Dörpfeld, *Troja und Ilion*, 49.

[3] Part I, p. 8 sqq.

[4] Ibid., ¶ 4.

[5] *Vide infra*, pp. 64; 65, n. 2.

and the vessels, or at least some of them, would turn brown, yellow, or red.[1] And so we find at Yortan[2] and even at Hissarlik I,[3] vessels which differ in no way from the majority but in their colour, which is bright red. We have definite proof that the Anatolian potters soon came to know how they could produce at will one colour or the other; from various sites in the peninsula we have small bowls, which are apparently fired mouth-downwards in the ashes, so that the inside and the rim round the mouth is black, and the outside is red.[4] Here we find, therefore, the peculiarities of both the reducing and the oxidizing firing made use of; in fact, the fire itself must have been oxidizing to produce the red outside. And subsequently all over Anatolia the oxidizing firing was adopted; for from every site of which we have any sherds at all we have specimens of this early red fabric.[5]

The transition was not difficult to effect; the addition of a few large vents may have been all that was done at first. But the new method contained possibilities of enormous progress, while the old one was naturally stagnant. A smoky, sullen fire which produced black vessels could not be improved upon: it could only admit temperatures of a very limited height; consequently the pots never passed beyond a certain degree of softness and porousness. The last-named evil, in fact, was counteracted by the thick, polished jet-black slip, which thus served an utilitarian as well as an æsthetic purpose. But once the oxidizing firing was adopted the whole problem of air-regulation became of immediate importance; any failure to maintain the access of oxygen throughout the firing produced at once disfiguring black stains on the red vessels. And the attempt to avoid these led at last to the adoption of the kiln. At the same time, the bright fires produced higher temperatures, and thereby stronger and less permeable vessels; the walls could be made thinner, and the thick, compact, polished slip became superfluous. Merely for æsthetic reasons the better vessels are sometimes still covered with a coating of finely levigated clay (a slip, therefore), or otherwise with nothing more than a red wash, while the ordinary household ware is left unpolished in its natural drab colours. The presence of the

[1] These circumstances have been recently studied again and in much detail by M. Franchet (*Revue Anthropologique*, 1922, 100 sqq.). Not only the amount of iron in the clay (producing either black ferrous oxide FeO or red ferric oxide Fe_2O_3), but also the presence of chalk and the temperature have influence on the resulting colour, as the chalk produces complex silicates and brown and drab shades. To quote one example from a letter of M. Franchet: clay containing 10 per cent. chalk and 6 per cent. iron oxide will produce yellow shades, if fired at a higher temperature than 700° C.

[2] *Brit. Museum Catal.*, A.8; A15; A36, etc. Berlin Antiquarium, 3720–1; bowls of "type C" of Hissarlik I, with horizontally pierced lugs: *Katalog Schliemann Sammlg.*, 106.

[3] *Katalog Schliemann Sammlg.*, p. 161, 162.

[4] From Tepeh Alevi (between Marsovan and Amasia) in the Ashmolean Museum; from Northern Galatia *Journ. Hell. Stud.*, xix, 38, and from Bos Euyuk (*Athen. Mitth.*, 1899, 24, "sehr häufig" 32). There is no necessity to postulate a second firing, as is done there.

[5] *Journ. Roy. Anthrop. Inst t.*, 1903, 374 sqq. *Annual of the British School of Athens*, xvi, 94 sqq.

latter variety even at Yortan shows that the transition was completed within the period during which that cemetery was in use.[1]

Here then we have obviously to deal with a consistent and continuous development. Once the decisive first step is taken the subsequent stages follow inevitably. It remains to fix them chronologically, after having considered whether the initial change was perhaps due to influences from abroad. There is no reason to assume that at all. We shall see that to the south and east of Anatolia, light-coloured pottery is made from the beginning; but differs so much more from both the red and the black Anatolian wares than these differ from each other that it would be absurd to appeal to them for an explanation of what, as we have seen, may so easily be understood as a purely indigenous development; moreover, there is the gradual technical improvement, sometimes observed as a totally local achievement, for which only the last assumption can account.[2]

To fix chronologically the different stages of the evolution is a more arduous task than to decide on its origin. Hissarlik I was exclusively using black wares. At Yortan Kelembo and at Senirdje we could observe the transition to red ware. But these two sites, contemporaneous from a relative technical point of view, may have differed in absolute chronology; Senirdje seems younger, or at least seems to change later than Yortan, for its black ware has a much more debased, late character.

[1] The pottery from Yortan is so homogeneous, except for the change from black to red-ware production, that the period during which it was used seems to have hardly extended over more than three or four generations; cf. Berlin Antiquarium, inv. 4389–4395; 4399 (like *Schliemann Katalog Sammlg.*, 631), etc. I doubt whether the so-called unpolished vases from Senirdje were not merely damaged by salt while buried, as is suggested by the fact that their clay flakes off so easily (*Annual of the British School of Athens*, xviii, 88), for their shapes are identical with those of polished specimens.

[2] Mr. Ormerod, who has been careful to observe even the scantiest indications of stratification in his travels through South-Western Anatolia, has published evidence showing the gradual perfection of local wares (*Annual of the British School of Athens*, xvi, pp. 96 sqq.). We have seen already that the black wares were commonest in the deepest layers, while the red ware became more and more numerous towards the top. The first is, of course, black throughout the fabric; in the red ware the increased heat of the firing penetrates the clay to some extent, so that only the core remains black, while the break shows a buff colour on both sides of the black core. The black is apparently due to a carboniferous *dégraissant*, put in the clay (cf. loc. cit., p. 98). But there are, lastly, also a certain number of pieces fired so well that the heat has penetrated the clay completely, so that it has become one homogeneous buff mass, and all the coal has been burned away. In the curious black-slip ware (A3), with its black surface and core and buff hues in the outer layers of the break, we have a remarkable attempt to maintain the traditional black-ware appearance, while utilizing the advantages of the new technique with its high temperatures. The black cannot be due to coal, of course, and is, in fact, found to be ferrous oxide. As suggested (loc. cit., p. 99), the result may have been produced by firing in the reducing atmosphere of a closed muffle. Another proof that the transition from one technique to another is entirely a local Anatolian achievement is the occurrence of identical shapes in red and black ware; compare *Athen. Mitth.*, 1899, pl. II, p. 6 (Bey Bazar), with *Journ. Hell. Stud.*, vol. xix, p. 35, fig. 2, and *Annual of the British School of Athens*, xviii, pl. vi, 3, with pl. vii, 3, and ibidem pl. vii, 9, with pl. vii, 11. From Yortan there are numerous examples.

The incised black ware with white filling survives at Senirdje only in one instance and then it is carelessly applied; otherwise it has degenerated into mere scorings, while the figurines from Adalia[2] show that incision-technique once flourished in Pamphylia not less than in Mysia. So we have to remember, when later on there follows the Anatolian expansion westward, that local differences may have existed to such an extent that the different stages of the identical technical evolution may have been reached in various parts of the peninsula at various dates.

Hissarlik. Another kind of local differentiation again seems to be exemplified by Hissarlik II. In this rich and important city we find, as a rule, neither red nor black vessels. Most of the pots show brown, reddish-grey and drab hues, often with smoke-stains. They are obviously produced with less care than the older pottery and than the contemporary wares in provincial centres, such as Bos Eyuk, Bey Bazar and the like. The reason may well be that at Hissarlik, the prospering centre of the young metal trade, copper, silver, and gold were used for vessels. to an extent of which we have notwithstanding the "treasure of Priam," an entirely erroneous notion.[4] The potter would then only have been required to produce henceforward the lowest class of vessel. He continued, of course, in the traditions of his craft, and a certain development can therefore be traced. But the sudden fall in the value of his product accounts for the fact, noticed first by Dr. Hall as typical of the beginning of the Metal Age in general,[5] that notwithstanding technical advances his ceramics stand as a whole on a lower qualitative plane than those of the preceding period. At the same time

[1] *Annual of the British School of Athens*, xviii, 89.

[2] *Liverpool Annals*, ii, 146 sqq.

[3] Though I have worked through the Schliemann Collection with this matter in mind I have not been able to find in it the confirmation of Prof. Schmidt's words: "Besonders ein schoenes rot zu erreichen ist man in der zweiten Periode andauernd bestrebt" (in Dörpfeld *Troja und Ilion*, 253), nor with the contention that the beautiful red "allmaehlich die Vorherrschaft gewann." It occurs occasionally, but one has to credit the potters with a colossal failure if one pretends that they all the time tried to produce it; for I am not sure that there are more than, perhaps, two dozen really bright red pots among the hundreds of vessels from Hissarlik II; these, however, suffice to show that they could produce them if they wanted to, and one cannot therefore, refer to all the specimens with unsatisfactory reddish-brown shades and maintain that these were meant to be a fine red, but that, for instance, only clays with too great a percentage of lime for that could be obtained (*vide supra*, p. 64, n. 1). See also following note.

[4] Perhaps the most important scientific result of the discovery of the more or less undisturbed tomb of Tutankhamen is that it shows again how the indications from fairy-tales about the materials of which objects for practical use were made are nearer the truth, at least for the Ancient Near East than our sober modern ideas. Still, the same is also suggested by what we actually have already from Egypt, Troy, and Greece in the way of metal objects, if we consider that these are merely what is left after three to four millennia, during which this material has been the most attractive form of loot. We may mention here also, as belonging to the period under discussion, an Early Helladic gold sauce-boat in the Louvre, recently published by Mr. Childe (*Journ. Hell. Stud.*, 1924).

[5] *Proc. Soc. Bibl. Archæol.*, 1909, 137. Also *Ægean Archæology*, 72. Also in Egypt the pottery of the early dynasties is really poor if compared with the predynastic fabrics.

the way is opened for industrialization, which is effected at Hissarlik by the introduction of the potters-wheel; and it is significant that this important device is first of all used for the mass-production of a handy but artistically most objectionable household-ware.[1] Our assumption explains at the same time why at Hissarlik II no imitations of metal shapes in pottery are found: those shapes belonged at once to an entirely different class of utensils. In the more conservative and less prosperous country-side the change would be neither so sudden nor so complete. At Bos Eyuk, for instance, which is contemporary with Hissarlik II, we encounter definitely red ware vessels[2] as well as ceramic imitations of metal vessels[3]; and the latter we shall find again in the Ægean, which had to get its metal from the East.

So much for local peculiarities, whence the results of one and the same technical development appear differently in one part and another: we have still only been able to define at most two stages of that development chronologically; the first is the transitional stage, in which the red-ware technique displaces the black-ware production; and, secondly, the introduction of the wheel in Hissarlik, which falls in the Second Period of the Second City.[4] Unfortunately, this is the only point which is stratigraphically fixed; but we must attempt to enquire whether nothing more can be ascertained, the more so as the stratification of the site is so well known, since Schliemann, wisely realizing the inefficiency of his unskilled enthusiasm, put the excavations under the able direction of Professor Dörpfeld (1890). It has, indeed, proved possible to define clearly the pottery which belongs to the First and to the Sixth City. But the enormous mass deriving from Cities II–V was found in earlier campaigns. Schliemann died before the collection was rearranged; apparently his notes afforded little guidance, and so this important collection is treated as a whole and classified on the excellent principles of Poppelreuter,[5] by Professor Hubert Schmidt exclusively according to technical characteristics.

No doubt it is the best that could be done under the circumstances; all the same a highly unsatisfactory state of affairs has to be faced. The main lines are doubtlessly correct, but to utilize this important material one does not want generalities, but detail; one wants to know, in a given case, where a certain vessel, or a certain class of vessels appears or disappears, to which context it belongs; and in each special case uncertainty must necessarily exist, for the technical variety of

[1] Schliemann, *Katalog*, 885–1032.

[2] *Athen. Mitth.*, 1899, pl. ii, 1, and pp. 25–6, 28.

[3] Ibid., pl. iii, 17, a comparatively early example, hand-made and burnish-decorated. Other examples are mentioned. Ibid., p. 26, 32.

[4] Dörpfeld, *Troja und Ilion*, 254.
Jahrbuch. Deutsches Archæol. Institut., 1896, *Anzeiger*, 105 sqq.

the pottery in use at any one moment is always very great indeed[1]; and if we lack the corrective of stratigraphical evidence (as in the case of Hissarlik II–V), a classification based on technical characteristics may easily separate what in time belongs closely together.

The classification divides the pottery of the second, third, fourth, and fifth settlement all together into 20 "*groups*," which are again combined to form three "*periods*" of technique; the First contains hand-made wares of a more or less primitive character; the Second contains the earliest vessels made on the wheel and hand-made wares which for one reason or other seem to go together with them; the influence of the kiln is now also noticeable. The Third "period" finally contains "achieved" wares; some of these link up with the pottery of the Sixth City.

The question is, obviously, whether we cannot define somewhat more closely which technical stage belongs to each of the settlements which are now distinguished on the site; and before we attempt to give an answer, it is worth while to consider first of all the general character of the successive settlements, such as they appear from architectural remains.[2]

The Second Settlement, as is well known, is a powerful city. Within its remains one can distinguish two reconstructions; there are, therefore, three "Bauperioden." Finally, it was devastated by a violent conflagration—the wilful and complete destruction by some enemy. This must have been an historical event of the very first importance; we shall see later on that we are even able to put it in its proper perspective.

The succeeding City (III) is small and poor; obviously, it cannot have been the product of those who were able to destroy its predecessor. On the contrary, everything points in the opposite direction; that it was the survivors from the Second City, those who had escaped the catastrophe, who inhabited the third. They built within the old enclosure of the town, immediately on the old ruins; and they more or less reconstructed the walls, diminishing the two large gateways, constructed in times of greater magnificence and inappropriate to the new conditions, to one-half of their original size. They could get their sustenance from the fertile plains of the Simoeis and the Skamander, but without trade, even the poor relic of past glory which the Third City was, could not maintain itself; it decayed.

[1] The extent to which the particular use for which a vessel is made, and also the social position of its prospective possessor influence its appearance cannot be too strongly emphasized. Anybody who has handled quantities of pottery from stratified sites will confirm the admission that one finds in almost every layer astonishing exceptions to common rules as far as technical characteristics go. See also Part I of these "Studies," 5 sqq., 11. At Hissarlik, where, as we have seen, pottery seems somewhat suddenly to have lost its rank among the craftsmen's products there would obviously be a great difference at any given moment between the pots meant to be the best crockery of some burgher who did not possess metal vessels, and those which were the subsidiary household vessels of a rich user of metal services.

[2] Dörpfeld, *Troja und Ilion*, 99–107.

The Fourth City does not even deserve that name ; it is unfortified, a collection of huts merely. The succeeding settlement (V) starts in a not much more impressive way ; but it has from the beginning a protecting wall, and out of it, without break, develops the Sixth City, Homeric Troy.

The foregoing analysis of the architectural evidence shows that we have by no means to deal with equal entities if we want to divide the pottery, classified in three technical "periods," among Cities II–V. The most primitive wares belong, of course, to the Second City ; we have also seen that the second technical "period" in which the wheel is introduced falls within the existence of the great second settlement, in its second "Bauperiode," in fact. The question is thus simplified to this : How far the progress formulated in the third technical "period" is still achieved during the Second City. Now there lies a difficulty in the fact that there is obviously a strong element of continuity asserting itself in these ceramics of Cities II–V ; if it were not for that they could not have been comprised in one single classification. But, on the other hand, there are, just inside the third technical "period," some new features which link on directly with the wares of Hissarlik VI, so that we may doubtless claim the pottery in which they appear as belonging to the fifth settlement, which is, as we have seen, the opening stage of the sixth. What remains would then belong to the great Second City and to its two humble successors, which, as we have seen, are mere survivors and can hardly be expected to introduce innovations.[1] Thus some grey wares and, above all, the bowls with polished cross, already considered as a class by themselves by Prof. H. Schmidt,[2] would belong to the Fifth City, because they can directly be connected with wares of the Sixth. This conclusion, as we shall see later on, puts in our hands a most important clue as to the factors which brought about the rise and greatness of Troy. But it is also highly important for us to prove that the *technical stage* which these bowls represent was already reached within the period of existence of the Second City.

Red wash ware.

This technical stage is the latest which we mentioned when we described in the opening of this paragraph, the development of the red ware in Anatolia ; it is the stage in which the firing is well controlled and the ware so homogeneous and compact that no actual slip is needed, but a red wash, sometimes polished, takes its place, a wash the function of which is, of course, merely æsthetic. The pottery of this stage, which we may call *red-wash ware*, is found all over the peninsula. It is very characteristic and easily recognizable. The ware has rarely a black core, and is yellow and orange on the break. The red wash is generally wine-red, sometimes orange-red, and appears

[1] If the Fifth City possessed wares which are directly descended from those of the preceding settlements and do not link up with those of the Sixth, they are, of course, of necessity incorporated among the remainder. But the distinctive features are more important than the common ones, and we must accept the impossibility of getting as complete separation of the wares of the different sites as modern excavation-technique (elaborated after the time of Schliemann's work) would produce.

[2] In Dörpfeld, *Troja and Ilion*, 266 sq.

with or without additional polish; occasionally it is so smooth and shiny after the firing that no mechanical polishing is necessary. Often it only covers the upper part of the vessel up to just under the greatest width (see Pl. XII, 1, 6); underneath the handles or inside the vessel, in short, in all those places which the brush could not easily reach or which are not conspicuous, it is generally lacking; this is in strong contrast with the older red-slip ware, where the slip, of course, covered the vessel completely because it had a utilitarian function, while its thickness, moreover, would produce an awkward unevenness if the vessel were only partly covered. The red-wash ware is sometimes, but not always, wheel-made.

This ware is widely spread over the Anatolian peninsula: it is known from Bos Euyuk and Bey Bazar[1] in Phrygia, and in the Ashmolean Museum are fragments from Kizil Dagh, Bonat (south-west of Lake Tatta) and Tepe Alevi in Western Pontus, and also a wheel-made jug, found by Mr. Halliday at Kara Euyuk. At the last-named site Chantre found a number of bowls,[2] some theriomorphic handles and spouts,[3] a house-shaped vessel,[4] four small unpublished pots like that of Mr. Halliday, a large somewhat primitive beak-spouted jug which is hand-made,[5] and a side-spouted jug with strainer, which is wheel-made[6]; spouts like that of the latter were found in "quantités innombrables," and a good number of them are now with the other finds in the Musée Guimet in Paris. Finally, the excavations at Boghaz-Keui have produced an enormous quantity of this ware in an "achieved" form. As we shall see, it has there to be assigned to the period of the great Hittite Empire in the fourteenth century. But this is merely a *terminus ante quem*. For we can definitely state that this widely distributed ware was made already in the last period of the great Second City at Hissarlik.

Firstly, I have noted a certain number of vases in the Schliemann collection which belong beyond any doubt to the Second City and show this technique.[7] From publications it is somewhat hard to adduce this proof, as "Ueberzug" may of course, mean both slip and wash; but in a few cases we find "Pinselaufstrich" mentioned. A good instance is further given by the vases with human faces (Gesichtsvasen). This is a kind of vessel not known in the Sixth City, though some of its trefoil-mouthed jugs ornamented with knobs may be considered its descendants. We find similar knobbed jugs in red-wash ware in the third technical "period," which therefore may belong to City V. But the *face-urns* of the same technical

[1] *Athen. Mitth.*, 1899, pl. ii, 6.

[2] Chantre, *Mission en Cappadoce*, pl. ix.

[3] Ibid., pls. xv, xvi.

[4] Ibid., pl. xx, 2.

[5] Ibid., pl. v, 1. The red wash goes just over the rim, but is lacking under the handle where the brush could not come easily. The bottom is too small to be of much use.

[6] Ibid., pl. viii, 3. The red wash only descends to about one-third of the height above the bottom. The red wash is very thin and hand-burnished.

[7] *E.g.* 1893, a beak-spout; 2019, a two-handled beaker of a type not known in the Sixth City, etc.

period," which are also red-wash ware, are of a more archaic type[1]; they have ot even a piriform body, like the vessels[2] which are the last to render the human eatures with any completeness at all. The red-wash face urns, as well as the closely elated "group 15"[3] are directly connected with the pottery of the second technical period,"[4] and therefore certainly fall within the period of the existence of the Second City.

In keeping with this is the fact that some sherds of red-wash ware,[5] which, robably via Max Müller, reached the Ashmolean Museum in 1886, are marked by Schliemann himself as coming from the Third City; and we know that, after the vork of 1890, he had to admit that what he first called the Third City actually was he Second.

The evidence from Bos Euyuk confirms this thoroughly. This Tell[6] is contemporaneous with the Second City at Hissarlik, *not* with Cities II–V, as is so often vith confusing vagueness asserted.[7] There are at Bos Euyuk no signs of the nnovations which distinguish the Sixth City, and which are already appearing in he Fifth. On the contrary, we have found there some quite early shapes[8] and the wheel is only used in a minority of cases.[9] Now, it is interesting that a large two-handled drinking bowl[10] of a type which has its nearest parallels in the second technical "period" at Hissarlik—and that means well within the period of the Second City—belongs to the red-wash ware. This last instance may therefore be even earlier than those from Hissarlik II, which belong to the third technical "period." This need not astonish us, though it is useful, in view of our further research, to state this possibility explicitly. We have seen that the red-wash ware is a natural stage in the common development of the Anatolian red ware, and the moment at which it appears first in each region is therefore entirely a matter of the local *tempo* of development. It is at least clear that this stage was reached in north-western Anatolia before the Second City of Hissarlik was destroyed.

[1] *Katalog Schliemann Sammlg.*, 1830–34; as usual at Hissarlik rather with brown than red colouring.

[2] Ibid., 1846–49.

[3] Ibid., 1761–1829: so-called "Leichte Fabrik," just as the face-urns of n. 1.

[4] Cf. ibid., 1066–74; 1097–1138; 1312–16, etc.

[5] Ashmolean Museum, AE360, 6534.

[6] With Mr. Ormerod, *Annual of the British School of Athens*, xvi, one has to reject Koerte's interpretation as a tumulus.

[7] No doubt because much of its pottery is of such excellent quality. But we have given another reason of that difference. (*Vide supra*, pp. 66 sq.).

[8] *Athen. Mitth.*, 1899, ii, 1, a bright-red jug, links up with the earliest jugs of Hissarlik II, and even of Hissarlik I, and with the Pisidian vessels. The same early stage is suggested by the common occurrence of partly coloured bowls (ibid., p. 24). The flat bottle with sloping neck is also related with early vessels from Hissarlik (Schliemann, *Katal.*, Nos. 634, 636), and so is the small cup with primitive knobs (*Athen. Mitth.*, 1899, iii, 10; cf. Schliemann, *Katal.*, 859).

[9] *Athen. Mitth.*, 1899, p. 23.

[10] Ibid., pl. i, 9.

¶ 11. In the first part of these "Studies" we found that Susa II had to b considered, on a variety of arguments, as the southern outpost of a civilization whic stretched thither over Assur from North Syria, which it comprised entirely.[1] Now as then, we have to leave the question open whether some parts of Anatolia belonge to this culture. When we deal with Hittite pottery later on, this matter can b discussed more fruitfully.[2] But with Syria and Palestine we shall have to occup ourselves a little more fully than we did before; for only the completest possibl survey of the eastern Mediterranean coast can justify our subsequently assignin features which appear on the islands to a definite place of origin.

Syria and Palestine.

In Syria, however, excavation has only just begun; and in its southern depend ency, Palestine, the peculiar character of the country explains why all chronologica schemes are so extremely vague as soon as the third millennium is concerned. Palestine neither possessed vast tracks of desert, where the dead could be buried and would not be disturbed in later ages, nor was it able to erect colossal sanctuaries which might have preserved in their ruins so many traces of past life. In Palestine life and burial, in all the succeeding centuries, went on on the same very limited territory and thus the remains, already none too striking as compared with Egypt or Babylonia, suffered proportionately an even more extensive destruction. Above all, the *oldest* remains were thus "telescoped," and there is therefore only the scantiest possible material to divide over more than ten centuries.

Here, however, Egyptology may come to the assistance of Palestinian archæology. For, as we have seen in the first part of these "Studies," a certain number of Syrian fabrics appear in Egypt in the late predynastic and protodynastic period.[4] Even if we cannot go back so far on Palestinian material alone, we must assume that

[1] Part I of these "Studies," Chapter iv. See below in the Appendix for the latest material.

[2] *Vide infra*, ¶ 22, and especially Appendix i.

[3] The chronological scheme of the British School of Archæology at Jerusalem brings the Early Bronze Age to an end at 1800 with the advent of the Hyksos Period, but does not differentiate earlier periods. Prof. Macalister in *The Excavations of Gezer* distinguishes a Pre-Semitic and a First Semitic Period (the end of which coincides with the beginning of the Hyksos Period again), but avoids expressing any opinion about dates. P. H. Vincent did the same in *Canaan* (pp. 305 sqq.). In the *Classification des Céramiques Antiques* (Union Académie Internationale), he distinguishes a "Neolithic" Period up to 2500 B.C. (on *Neolithic*, vide supra, p. 6), and a "Cananéenne ancienne" 2500-2000 B.C., thereby making his distinction on the basis of the Palestinian material. As in this division the roughest vessels are put in the First Period and the better ones in the Second, one may well doubt whether the view corresponds with facts. We find indeed that P. Vincent has actually to divide the pottery of one undisturbed tomb-group (No. 3 in *Jérusalem sous Terre*, pl. ix–x) to illustrate the two periods. As to Prof. Macalister's two periods, compare the "pre-semitic" contents of cave 3, iii (*Gezer* iii, pl. xvi), from the "troglodyte" crematorium (*Gezer* ii, fig. 205), with the "first semitic" pottery from tomb 56 (pl. lxxx with *Gezer* i, 321), and tomb 42 (pl. lxxix), and from the crematorium (*Gezer* ii, fig. 316, 317). Compare also the "pre-semitic" sherds from cave 30, ii (pl. xliv, 5, 6, and *Gezer* ii, 143), with the "first-semitic" pots; *Gezer* ii, fig. 317, 2, 3, cf. *Jerusalem sous Terre*, pl. ix, 3). Watzinger (*Jericho*, p. 106), refuses to differentiate within his group of oldest finds, the youngest of which he brings down to 1500 B.C. Important finds of the earliest period are made by Mr. W. F. Badé at Tell en-Nasbeh.

[4] Frankfort, "Studies," I, 104–111.

the parent-stock of the wares which we find imported in Egypt existed in Palestine and Syria in the end of the fourth and the beginning of the third millennium. Again, the Palestinian finds containing such wares may not (or may not all) belong to so early a period, because we have to reckon with the very long stretch of time during which the same pottery was used. But the Egyptian parallels at least provide a *terminus a quo*.

As a feature common to all of these fabrics we note that they, together with those found further east, in Mesopotamia, Persia, and Turkestan, form a contrast with the earliest Anatolian wares. For, it is Anatolia alone which starts with carboniferous wares, while all the rest of Western Asia uses light-coloured fabrics throughout. These can in no way be derived from the Anatolian black wares; the two techniques represent diverging lines of development influenced by climatological factors.[1] In the northern mountains, where rainfall was copious, black ware was developed in which the accidental circumstance that sullen smoky fires prevailed was purposely utilized to improve the product. In the drier regions an improvement of technique soon enabled the potters to avoid smoke-stains altogether and produce an evenly light-coloured ware. Whether both go back to a common root—in other words, whether pottery-making was only once invented in the Near East—we cannot say; the evidence on which we depend at present hardly favours the assumption, for we find fundamentally different and obviously native ceramics in quite early periods at Susa, in Egypt, and in Anatolia.

Wavy-handled jars.

Let us now, however, specify some Syro-Palestinian pottery which must on the strength of Egyptian evidence have existed earlier than is generally assumed. Oldest of all are the wavy-handled jars which, in Egypt, appear in the first half of the predynastic period.[2] We have elsewhere discussed this class of pottery, and we have seen that possibly the early trade in olive oil led to its importation into Egypt, and thus incidentally left to us this valuable material for cross-dating. Here we have a fabric which certainly belongs to the second half of the fourth millennium B.C. In Palestine the wavy-handles, appearing amongst the earliest remains, are merely a variety of the ledge-handles which last well into Macalister's First Semitic Period; one debased specimen is even wheel-made.[3] But the true wavy-handles

[1] Prof. J. L. Myres, *Journ. Roy. Anthrop. Inst.*, 1903, 368 sqq. Frankfort, "Studies," I, 8–11.

[2] The objection of Watzinger (*Jericho*, p. 104) that the Palestinian and Egyptian wavy handles are of a different type does not hold good. The type which is commonest in Egypt is rare in Palestine, because it is, as we shall see presently, the oldest variety. But it does occur in Palestine (Bliss–Macalister, *Excavations in Palestine*, pl. xxv, 5; xxvi, 15; H. Vincent, *Jérusalem sous Terre*, pl. vii, 12). Of course, it is impossible to see in this an importation from Egypt, as there these vases do not fit in at all with the local wares, while in Palestine it is merely an early variety of a common type, which exists for centuries. The other Palestinian types moreover (Bliss–Macalister, loc. cit., Nos. 9, 10, 12) are also occasionally found in Egypt (Petrie, *Preh. Egypt*, Corpus, W. 1, 3, 4, 6, etc.).

[3] Bliss–Macalister, *Excavations in Palestine*, pl. xxv, 7, and p. 79.

are the earliest variety, for Bliss and Macalister[1] have shown that originally the ledge-handles were actually pinched out from the clay of the body of the pot and thus acquired naturally a wavy form.

Other early wares.

Somewhat later in date is the foreign pottery found in the Royal Tombs of the Ist dynasty at Abydos, which, as we have shown before, has Syrian affinities.[2] I we omit the second class, which has not much character of its own, we have, in the very beginning of the third millennium, to account for a *burnish-decorated* pottery *a polished and slipped* ware, and a class of *painted* (*red on cream slip*) vessels.

These three classes differ alike from the earlier wavy-handled vases in the fact that they are covered with a coating of paint or levigated clay, while the surface o the wavy-handled class is simply the body-clay itself. The latter seems to be the original and first stage in Syria and Palestine, for in the earlier layers natural faced wares are far in the majority. Still one finds sometimes attempts a decorating them: there is the "comb-faced" ware, where the wooden tool used t smooth the vessel has short teeth and so impresses groups of parallel lines whe the outside is scraped down before the firing.[3] A similar intention, namely t improve the appearance of their vases, led these early potters also to the use o colouring matter; paint of brownish red earth was either applied equally over th surface of the pot or rough frets and bands of lines were drawn over the surface which—a further refinement—was sometimes burnished.[4] Thanks to Mr. Woolley' enterprise[5] we know now that at least as far north as Byblos the same phenomen can be observed.

Here then we find, entirely within the scope of the local production, the ver beginnings of the improvements which we noticed in the Syrian pottery from th Royal Tombs at Abydos, if compared with the wavy-handled class. Consequentl we are entitled to claim a local native development for those Syrian wares, of whic the vessels found in Egypt are merely representatives which fortunately came dow to us in surroundings establishing their early date.

It is of some importance that the native Syrian origin of these wares shoul thus be vindicated, because we see how originally different ceramics converge int

[1] Bliss-Macalister, loc. cit., p. 83, n.

[2] Frankfort, "Studies" I, 105–111.

[3] No doubt we have here again, as in the case of the black carboniferous fabrics, the delibera application for æsthetic or useful purposes of what was originally a mere accident; the wood smoother, if used at right angles with the grain of the wood, would soon be worn down to shallow "comb."

[4] Macalister, *Excavations of Gezer* ii, 134 sqq; see also the varieties combined by H. Vince in his "Époque néolithique" (*Classification des Céramiques Antiques*).

[5] *Liverpool Annals*, x, pp. 36 sqq., and pl. ix, 1. The circumstances of the finding of Mr. La rence's sherds (ibid., pl. ix, 2) are too uncertain to make it possible to utilize them. The desig and the shape, but not the hæmatite wash on the light burnish, recall Neolithic ware of Knosso They may also be a local variety of the sharp-edged bowls of the Middle Bronze Age (Hyks Period) in Palestine. They remain enigmatic.

milar products; both in Anatolia and in Syria we find pottery covered with a thin ed slip, or a red wash. But in Anatolia this is the outcome of a development which tarts from a definite black-ware production, and then reaches the final stage via a hick red-slip ware, which is only simplified to thin red-slip and red-wash ware owing o technical improvements. In Syria and Palestine we find a thin red-slip or red-wash ware added to natural coloured vessels on merely artistic grounds, without any hange in the general character of the ware. Finally the burnish, which was an bsolutely essential feature in the originally very porous Anatolian vessels,[1] tends to *disappear* there in the later stages of the development; in Syria and Palestine it is, gain, sometimes *added* as a mere matter of perfecting the vessel's appearance.

Burnish-decorated ware.

Thus the burnish-decorated Syrian ware is closely related to the ordinary lipped and burnished pottery of the same region (of which the bottles or jugs[2] ound at Abydos[3] are merely a special type), and we have no right to bring them nto any relation with the similarly decorated Anatolian specimens which are a ariety of the Anatolian wares. It is only at Sakjegeuzi, where the contemporaneous appearance of natural-faced fabrics and black-incised white-filled wares already n the deepest layers shows us that we are in a peripheral region where two ivilizations met and mingled, that we find black specimens of the burnish-decorated ares; and there one might doubt to which sphere they belong.[4] Otherwise this ottery shows red and brown colours only. To its shapes we have now to add a eautiful straight-necked bottle from Tell Acharat in the Museum at Beyrout ee Pl. VIII, 1). The known shapes[5] differ, as those of the thin red-slip ware,[6] from nything known in Anatolia.

[1] Vide supra, p. 64.

[2] Vide infra, n. 17.

[3] Frankfort, "Studies" I, p. 107 sq.

[4] A more complete publication of these excavations is wanted the more as the preliminary port in *Liverpool Annals*, i, 97 sqq., is not always clear. On p. 112 it is stated that painted ottery appears in the "Later Neolithic" layers; on p. 115 and pl. xlviii we find painted ware om the "Neolithic Floors." About the non-neolithic character of Sakjegeuzi, see M. Dussaud *Revue de l'Ecole d'Anthropologie*, 1909, 312 sq.

[5] Other shapes are hardly known; see Frankfort, "Studies" I, p, 106, and Macalister, *ezer* iii, pl. xix, 1 (cf. *Gezer* i, 84) and pl. cxliv (cf. *Gezer* ii, 147).

[6] The jugs, known from the Royal Tombs at Abydos and from Tarkhan, are sometimes und in Palestine: Macalister, *Gezer* ii, fig. 2 (second from left), and decidedly Sellin-Watzinger, *ericho*, Blatt 21 E 4 (cf. p. 100). The two short vertical ridges on its sides recur identically on jug from the Royal Tombs in the Petrie Collection at University College, London. They are oubtlessly degraded handles (cf. a four-handled pot, Macalister, *Gezer* ii, fig. 304): the interetation as "arms" is not in keeping with the complete absence of anthropomorphic features the pottery of this period. Further, there belongs to this type of jug Macalister, *Gezer* iii, lvii, 3 (cf. *Gezer* ii, 140). These jugs are as rare in Palestine as their successors of the 15th ntury B.C., the "Syrian Flasks" (Petrie, *Tell el Hesy*, pl. vii, 121. Macalister, *Gezer* ii, fig. 338: Wainwright, *Balabish*, 62). This is again a strong argument in favour of the Syrian origin both the early and the later variety. The thin red-slip ware contains further the following apes: small "cream-jugs" · H. Vincent, *Jérusalem sous Terre*, pl. ix, 6 (burnished); viii, 11

Painted ware.

We have seen that the same decorative intention which led the potters to com their vessels, to cover them with a wash or thin slip, or to burnish them, brough about vase-painting.[1] Originally there were a few simple lines scribbled on th clay of the body of the pot; to bring the decoration out with more contrast than th reddish-buff background afforded, the curious device was adopted of covering th vessel (after the firing) with a white wash of lime.[2] No more striking proof could b afforded of the merely artistic intention of the surface-finish. Still, this proceedin is far from satisfactory, even if one leaves out of account the consideration that th lime-wash is easily washed or rubbed off. Consequently, we also find vessels wit a creamy *slip*, on which the designs are applied in a thick opaque, sometimes oily-re paint, which then stands up in relief on the background. This is particularly th case in the "cream-ware," which, as we stated elsewhere,[3] may well be foreign t Palestine, and belong to a more northerly region. But the wares from Mount Ophe and the ordinary painted wares from Gezer[5] are, as it were, provincial relatives the "cream-ware," sharing as far as their means allow them to do so, in its technic advance as compared with the earlier fabrics, but keeping to their own shapes an the poorer, simpler designs of the "cream-ware," such as cross-hatching and oth ornaments derived from matting[6] (Fig. 15); but even these designs sometim possess a beautiful shine.

At Tell Harbaj, in the Plain of Acre, affected by whatever intercourse with th north may have existed at the time, we find in very early contexts specime

(not burnished); Macalister, *Gezer* iii, pl. xvi, 2; xx, 10; high-handled jugs: Vincent, *Jérusal sous Terre*, pl. xi, 9 (burnished); viii, 12 (not burnished); cf. xii, 1; Macalister, loc. cit., pl. xx 2; small vessels with horizontally pierced lugs or handles: Vincent, *Jérusalem sous Ter* pl. x, 5, 6; Macalister, loc. cit., pl. xvi, 3; *Gezer* ii, fig. 316, 410; open bowls: Macalister, l cit., pl. xvi, 5–7; xx, 15; spherical pot with ledge-handles and spout: Macalister, loc. ci fig. 316, 3. We know this pottery also from Byblos, where it is found in a similar cave-bur as discovered at Mount Ophel. The Byblos cave-burial must antedate the XIIth dynasty, i it was cut through by the Hypogeum of that period; see *Revue Syria*, 1922, pl. lxiii, 4, cf. More jugs of this group are in the Beyrout Museum.

[1] Vide supra, p. 74.

[2] Macalister, *Gezer* ii, 135 and fig. 303; Bliss–Macalister, *Excavations in Palestine*, pl. xxv, Also known in Syria: Woolley, *Liverpool Annals*, x, 38.

[3] Frankfort, "Studies" I, p. 110. Macalister, *Gezer* ii, 137, 150; iii, pl. cxli. To those arg ments may be added a general likeness in decorative scheme (narrow bands of geometric desig and a more definite similarity in the shapes of the straight-sided bowls which exists betwe the cream ware on one hand, and the black incised ware at Sakjegeuzi on the other. Comp Macalister, *Gezer* iii, pl. cxli, 1, 3, 6, and specially 12; also the type of stone bowl found with t cream-ware; and *Gezer* ii, fig. 402A, with *Liverpool Annals*, i, pls. xlv, xlvi.

[4] H. Vincent, *Jérusalem sous Terre*, pl. ix, 1–5; x, 1–4; xii, 2.

[5] Macalister, *Gezer* ii, 317; iii, pl. cxliii, 6, 7, 21; pl. cxlv, 9, 6 (this one with a desi which the cream-ware uses). Sellin, *Taanek*, pl. i, *e*, *n*.

[6] This is particularly clear in the case of the open bowls and the amphoriskoi from Mou Ophel and Gezer; and in the latter case we have obviously to deal with a straw-binding of wh the small pierced lugs formed a part and which surrounded the vessel (whether originally pot gourd), so that it was easier to handle and protected from breaking.

apparently of the better technique.[1] This better technique is also represented by the vessels of this class which occur in the Royal Tombs at Abydos. The shapes and ornaments of these point definitely, as we have seen, to North Syria as their country of origin,[2] which, always in advance of its southern neighbour, may have developed and used the better technique throughout.[3] At the same time the simpler painted ware can neither be its debased descendant nor its primitive predecessor, but must just represent a contemporaneous lower grade ware existing alongside the other.

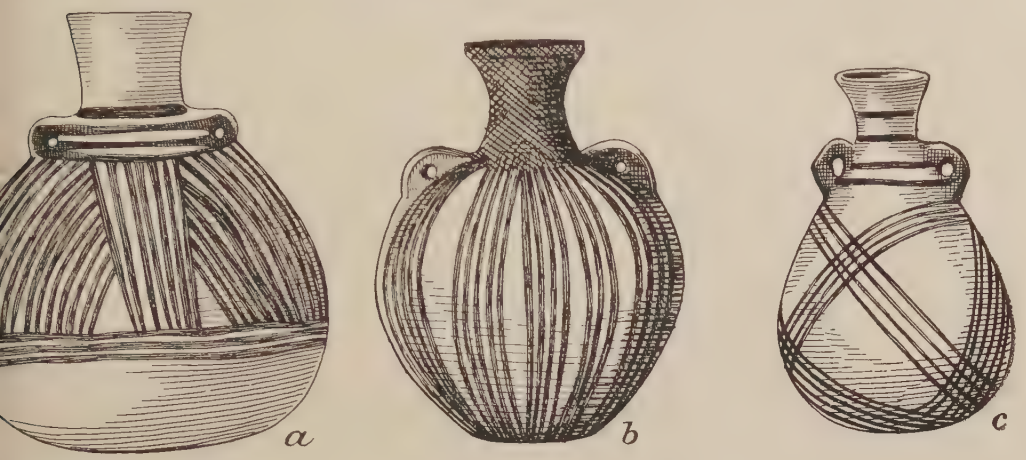


Fig. 15.—Small bottles from (*a*) Jerusalem; (*b*) Abusir el Melek; and (*c*) Cyprus.

For a little pear-shaped flask of the rougher painted ware is found in the cemetery at Abusir el-Melek (Fig. 15, *c*), which is protodynastic,[4] and about the same date has probably to be assigned to t he finds of Gerzeh[5]: a small undecorated double vessel of Palestinian clay[6] of the broad-bellied shape well known at Gezer and Mount Ophel in painted ware,[7] and a small jug with painted red lines, for which there happens to be no exact parallel in Syria or Palestine, but which fits in exactly in the class of

[1] *Bulletin of the British School of Archæology in Jerusalem*, No. 4, p. 46. They are: "two strangely anomalous fragments of fine yellow ware decorated with thin bands of orange paint. Both clay and paint are semi-lustrous." The very important pottery (pl. iv, ibid.) of this cave (troglodyte dwelling) is entirely homogeneous and related to the thin red-slip ware to which the greater part of it is similar in shape. Macalister, *Gezer* ii, fig. 316.

[2] Frankfort, "Studies," I, pp. 107 sqq.

[3] It is worth recalling, however, that the simpler variety is *also* found at Byblos, and is therefore not exclusively Palestinian.

[4] Scharff, *Vorgesch. Graeberfeld von Abusir el-Melek*, pl. xiii, No. 59 and p. 24.

[5] The tomb-group ranges between s.d. 47 (50) and 70, *i.e.* late predynastic, and seems therefore to be slightly earlier than Abusir el-Melek.

[6] Wainwright in Petrie: *The Labyrinth, Gerzeh and Mazghuneh*, 21 and pl. xi, fig. 46.

[7] Macalister, *Gezer* ii, fig. 317, 2. H. Vincent, *Jérusalem sous Terre*, pl. ix; cf. the double vessel, ibidem 2.

pottery under discussion.[1] Though the value of maces for dating purposes is no too great, it is just worth mentioning that another of the pear-shaped flasks w found at Gezer together with pear-shaped mace-heads such as were used in Egypt the second half of the predynastic and protodynastic period.[2]

Thus we may, on the strength of the Egyptian evidence, assert that just befo the beginning of the third millennium B.C. Syria and Palestine possessed not only thin red-slip ware, with a burnish decorated variety, but also painted pottery with certain number of geometrical designs, sometimes arranged in purely decorati narrow bands, sometimes also showing clearly the influence of matting and stra binding as its prototype.[3]

At first sight this result seems to conflict with evidence from another quarte Mr. Gjerstad at least, who has recently rearranged all the Cypriote material in su an admirable way, cannot accept our conclusion on the strength of his Cyprio evidence. But Egyptian chronological evidence which we adduced is absolut Let us try, therefore, to see whether the Cypriote material cannot be brought in harmony with our conclusions. That will at the same time give us an opportunity complete our survey of the eastern Mediterranean coastlands.

Cyprus.

¶ 12. Prof. Myres has long insisted that the earliest Cypriote pottery possess forms "so exclusively imitated from gourds and skin vessels, that it seems reasonab to suppose that the art of pot-making was introduced in an advanced phase from t mainland into an island culture which had only used perishable vessels before; t rather sudden appearance of a fine fabric of pottery would thus be fully explained. M. Gjerstad in his careful and comprehensive research has now localized conclusive the home-land of the earliest Red-polished pottery which appears ready-made Cyprus with the beginning of the Copper Age. In the pottery found by M. Ormero in Pisidia and Southern Phrygia not only does he recognize the same peculiar shap and accessories, but even the character of the clay, the slip, and the firing is so like wh one finds in Cyprus, "that the two can hardly be distinguished."[6] South-Weste Asia Minor shows an association with Cyprus far closer than any other region, ev including North-Western Anatolia, possesses.

[1] Macalister, *Gezer*, iii, pl. xxv, 9; xliv, 2; *Gezer*, ii, fig. 317, 2. Vincent, *Jérusalem so Terre*, pl. xii, 2. The comparison with Early Minoan wares (Wainwright, loc. cit.) does not ho good.

[2] Macalister, *Gezer*, iii, pl. xxviii, 2–4, and *Gezer*, i, p. 110. Cf. Petrie, *Preh. Egypt*, 23, a xxvi, 30, 32.

[3] Obviously we do not assert that the actual specimens found all belong to that early perio for as those wares existed for many centuries, the date of each find has to be considered on own merits.

[4] Myres, *Handbook to the Cesnola Collection*, 28 sqq.

[5] *Ann. Brit. School Athens*, xvi, 94 sqq.; xviii, 83 sqq.

[6] Gjerstad, *Studies on Prehistoric Cyprus*, 299 sqq.

Cyprus and Asia.

The contact once established, Cyprus with its wealth of copper ore[1] must very soon have known great prosperity, and a comparison between the remains of Early Cypriotic I and II reflects that development.[2] The pottery (Red-polished II) now shows an abundance of shapes and decorative designs. It is important to emphasize that this development must have followed *soon* on the discovery of Cyprus, possibly by prospecting South-West Anatolians. For Early Cypriotic I is already dependent on an Anatolian Copper-Age culture, as the pottery proves, and the Cypriote copper, which was the cause of the sudden rise of the island's civilization, must therefore have possessed at once and from the very first its full importance. The great rarity of remains of Early Cypriotic I is thus not due to an accidental incompleteness of our material,[3] but simply to the fact that it was a short initial stage developing quickly into the full bloom of Early Cypriotic II. Thus, there need not be any considerable distance in time between phenomena observed in the First Early Cypriote Period and others which we only know from the beginning of the Second.

Parti-coloured bowl.

This is important in connection with a type of vessel, classified by M. Gjerstad with Red-polished II ware (a fabric belonging in its bulk to the Second and Third Early Cypriote Period), but which we certainly must claim to be almost or perhaps quite as ancient as the oldest Cypriote pottery: the small hemispherical bowl with black inside and rim.[4] Its simple primitive shape rather contrasts it with the Red-polished II ware with which it is classed, and makes it appear as a relative of the simple undecorated Red-polished I pottery. Decisive, however, is its close similarity to the Anatolian parti-coloured bowls[5] which belong, in the development of the Asia Minor ceramics, even to that stage which is reached by the Pisidian wares from which the Red-polished I ware in Cyprus is directly descended. It is consequently quite impossible to separate the Cypriote parti-coloured bowls from their natural surroundings, viz., the Anatolian pottery on the point of transition from black-ware to red-ware technique. Consequently it must have belonged to the stock of Anatolian pottery from which the Cypriote ceramics sprang; and in recognition of the shortness of the First Early Cypriote Period it is of little consequence whether its existence in Cyprus can be proved for this period or for the next. The material of the First Early Cypriote Period is naturally too scanty for us to assert definitely that the parti-coloured bowls did not exist in Cyprus from the beginning because they happen not to be represented among the few remains which are certainly the earliest.

The parti-coloured hemispherical bowl has in itself not much value as dating evidence, as its use extends, in Cyprus, at least over several centuries. It even

[1] On the question of early copper in Cyprus see Dussand, *La Civilisation Préhellénique*, 249.
[2] Gjerstad, loc. cit., 89 sqq.; 263 sqq.
[3] As M. Gjerstad seems to suggest, loc. cit., 269.
[4] Ibidem, 95.
[5] *Vide supra*, p. 64.

seems to serve as a starting-point for what we may call a retrograde experiment of the Cypriote potters, who eventually produced some carboniferous black pottery alongside with their red ware in the Second Early Cypriote Period.[1] But at the same time the internal and external evidence just discussed puts the early date of its appearance so far beyond dispute that it can never be used as an argument *against* the early dating of a deposit in which it ocurs.[2] This is of importance above all in the case of the finds at Mount Ophel in Jerusalem,[3] where two of these bowls provided, moreover, with special marks of great age,[4] are found in a group of tombs together with thin red-slip ware and painted ware of the type discussed in the last paragraph.

We need not linger to study all the varieties of technique, shape and design in which the vigour and independence of Cypriote ceramic art manifests itself after once having taken root in the island. We may be satisfied to state how the Second Early Cypriote Period merges into a Third, which bears again a transitional character; especially towards the end new features assert themselves, and announce the subsequent Middle Cypriote Period. Most important among these is the appearance of "white painted" ware.

White-painted ware.

M. Gjerstad, to whom again we owe a thorough analysis and classification of these wares, briefly states that he sees no reason to consider them anything but native,[5] because the shapes and designs are related with the earlier Cypriote fabrics. For the bulk of the Cypriote ware this is certainly true; but *not* for the small group which M. Gjerstad has found to *precede* the bulk.[6] Certainly, here again we find some real Cypriote shapes and traces of native design. But what else could we expect from a ceramic art of such exuberant vitality as Cyprus displays in its Red-polished ware? Naturally the native tradition asserts itself strongly, but in a medium which is entirely new; and the uncertainty in the *syntax* of the geometric

[1] Gjerstad, loc. cit., 131 sqq. The author rightly concludes from the complete identity in the shapes of black and red ware that the first does not stand in any genetic relation to the Anatolian fabrics.

[2] This is done by M. Gjerstad, loc. cit., 302 sq. Our argumentation in the text based on M. Gjerstad's own excellent work, shows sufficiently that there is no reason to restrict the range of the parti-coloured bowls to Early Cypriote III and following periods.

[3] H. Vincent, *Jérusalem sous Terre*, pl. xi, 1 (from undisturbed burial in grave 3; fragments of a similar vessel come from cave 1; see ibidem, p. 31). A related piece comes from Gezer (Macalister, *Gezer*, ii, 151; i, 271). Here the inside is brown, *i.e.* meant to be red, and the outside and rim are black.

[4] Double lugs, vertically pierced, exactly such as appear in the earliest Anatolian ware (cf. *Katalog Schliemann Sammlg.*, 15) and, significantly enough, in the *earliest* Cypriote ware (Red-polished I). See Gjerstad, loc. cit., 302 sq. I do not wish to say with as much certainty as Gjerstad does that the bowls came from Cyprus and not from Anatolia, seeing that he himself admits (loc. cit., 299) that certain Anatolian wares can hardly be distinguished from those of Cyprus.

[5] Gjerstad, loc. cit., 310.

[6] Ibidem, 148 sqq. (White-painted I.)

esigns, which M. Gjerstad rightly notes, we need by no means explain by assuming hat the potters were using a new device of their own invention; their hesitation nd experiments would be no less intelligible if they were trying to adopt a foreign echnique.

And what convinces me that the latter explanation is correct is the xtraordinary and striking resemblance between the new technique in the form n which it first appears in Cyprus, and those painted wares which existed lready in earlier days in Syria and Palestine. On both sides we find the reamy white slip, with greasy, shiny, and orange-red paint standing out rather hickly upon it. In the somewhat later Cypriote "white-painted" wares, specially in "White-painted" III, which is the largest class, the resemblance s lost; the slip is thin, generally with a matt surface, and so is, often, the aint.[1] Here the potters have fully mastered the new idea of vase-painting nd what they produce is native in shapes and designs, and of a definite echnique, thoroughly their own. But it is obviously not this assimilated ware, ut the earlier class which is important if we want to decide whether the ew technique was discovered on the island or learnt from abroad. Now, besides he significant technical resemblances between these earlier (White-painted I) vares and the Syro-Palestinian pottery there is another and quite decisive act: the "white-painted" ware introduces in Cyprus the *amphoriskos*, the small ear-shaped bottle with two lugs on the shoulder which we know so well from Palestine[2] (Fig. 15). M. Gjerstad incorporates it in the small fourth class of white-ainted ware,[3] which he puts later than the bulk of Class III. But this ourth class is suspect so far as its homogeneity is concerned. The decoration s admittedly its only distinctive character,[4] and this decoration just shows similarities, *not* with the second and third, but with the first and *earliest* group

[1] Note that Prof. Myres, in the *Handbook of the Cesnola Collection*, pp. 25 and 29, distinguishes a "standard fabric with dull clay and paint," *i.e.* the thoroughly Cyprianized mass of the product and "a polished variety with lustrous paint," which is identical with M. Gjerstad's earliest class, White-painted I, but contains exactly the amphoriskos under discussion (No. 271), which M. Gjerstad places in White-painted IV. Even the small class of White-painted II ware seems to me to contain strong Syrian features. The technique is neither so Syrian as the preceding, nor so thoroughly Cypriote as the succeeding class, and in the decoration one notices designs, the foreign origin of which one can rather suspect than prove, in the absence of Syrian material. Still, we shall be able to give some evidence later on.

[2] *In Cyprus: British Museum Catal. C*, 291, 292, 293; Myres, *Handbook of the Cesnola Collection*, n. 271. *In Palestine:* Macalister, *Gezer* iii, pl. cxlii, 3–8; ii, 142; *Das Heilige Land*, 1922, 153, fig. iv; H. Vincent, *Jérusalem sous Terre*, pl. ix, 2; x, 1–4; Sellin-Watzinger, *Jericho*, p. 100, abb. 83, Blatt, 20, B6, Blatt, 21, D5.

[3] Gjerstad, loc. cit., 169.

[4] Ibidem, p. 170.

of Cypriote white-painted ware[1]; logically it follows that this fourth class contains elements which belong to the first, while other vessels which it comprises may belong to a later period, as is specially the case with small jugs which are found in Egypt in the Hyksos Period.[2] But among those elements which on the strength of foreign evidence *may* be late we do *not* find our amphoriskos. Neither does this shape occur in the main class (White-painted III), where one finds oval bottles as its nearest relatives. But it sometimes occurs with the technical characteristics of Class I.[3] It is, then, very probable that the amphoriskoi belong to the earliest group and were consequently remodelled when the Cypriote potters assimilated the foreign models.

However, in either case, whether the amphoriskos is in Cyprus dated to the Hyksos Period or whether it belongs to the earliest class of white-painted ware appearing in the First Intermediate Period (between the Old and Middle Kingdom in Egypt), in either case it is impossible to see in it an independent Cypriote creation for in the protodynastic cemetery at Abusir el-Melek an identical vessel was found[4] (Fig. 15, *c*). Consequently, the type must have persisted somewhere outside Cyprus and outside Egypt (where it appears as a foreign importation) from protodynastic times onward; and, obviously, that "somewhere" is definitely Syria and Palestine. For there we know that a painted ware amongst which our amphoriskoi are well represented existed already in protodynastic times,[5] persisted long,[6] and is even found far inland

[1] Gjerstad, loc. cit., p. 150. In describing the decoration of the earliest painted wares appearing in Cyprus (White painted I), M. Gjerstad states: "The concentric circles, the oblique strokes the row of crosses, and the crossing lines, do not appear before the White-painted IV ware; consequently since there is certainly 200 years between the appearance of the one and of the other ornament, and since all intermediary links are lacking, they have no connection with each other." It seems to me on the other hand that here probability is sacrificed to a once adopted classification The resemblance in designs supports the facts put forward in our text from which it seems that part of the White-painted IV ware really belongs to White-painted I. It is interesting that just the designs discussed here by M. Gjerstad as appearing in the *earliest* White-painted ware and having no parallel in the bulk of it, *i.e.* the assimilated and purely Cypriote third class of that fabric designs which are both early and exceptional, have parallels in Syria and Palestine: concentric circles: Macalister, *Gezer* iii, pl. cxlv, 4 (date doubtful, though called Second Semitic); oblique short strokes, typical of cream-ware (loc. cit., pl. cxli); crossing lines; characteristic of all the painted Palestinian pottery from Mount Ophel to Gezer, including the amphoriskoi. (See preceding paragraph.) The Syrian origin of the concentric circle motive is now proved by the French excavations at Kafer Djerra, where it occurs on a jar dating from the Hyksos Period (see Pl. vii, in Beyrout Museum) and from a jar containing a deposit at Byblos which is dated to the XIIth dynasty (see below, p. 149, n. 5). In fact, in the Hyksos Period it appears again ephemerally in Cyprus on ware plainly inspired by Syria (*e.g.* Gjerstad, loc. cit., p. 172, jug 4), but it only takes root with the Early Iron Age. Vide infra, p. 165.

[2] Gjerstad, loc. cit., 304 sq.

[3] *Vide supra*, p. 81, n. 1.

[4] *Vide supra.*

[5] *Vide supra*, p. 77.

[6] This is shown by its occurrence in the deepest layers of Askalon (*Quarterly Statement Palestine Explor. Fund*, 1923, pl. iii, 32); a typical *Syrian* fragment, with shiny slip and thick outstanding orange paint, such as in Cyprus is only found in White-painted I; and we can hardly believe that specimens of this small and rare class were exported to the mainland. The same applies to Macalister, *Gezer*, iii, pl. cxlv, 4. For amphoriskoi, see p. 83, n. 1.

n considerable quantities.[1] The earliest white-painted ware which appears all of sudden in Cyprus, shows in its very special technique, in its designs,[2] and as ar as the amphoriskos is concerned, in its shape, its descent from that old Syrian tock.

Cyprus and Asia.

The very period in which this Syrian technique is introduced makes the fact in tself more explicable. We know that, even before then, Cypriote Red-polished had penetrated into Syria[3]; but if, in the period which corresponds with the "First Intermediate" of Egyptology, the Syrian influences in their turn reach Cyprus, it means that Cyprus is also affected, even if only in a slight degree, by a momentous movement of peoples, which (as I have suggested elsewhere) starting far in the north-east, finds a second centre of radiation on North Syria, whence it brings the Amorites into Babylonia, becomes manifest in the appearance of a new glyptic with clear Asiatic features in Crete, and brings into Egypt not only Asiatic glyptic, but even Asiatic rulers, who in the VIIIth dynasty possess ephemerally the Pharaoh's throne.[4]

Thus the Cypriote evidence, far from being incompatible with the conclusions reached in the last paragraph, is on the contrary entirely in harmony with them. For we see appear in Cyprus, at a date contemporary with the "First Intermediate Period" in Egypt, a class of pottery which bears marks of a foreign origin and which we know to have existed in Syria already in an earlier period. We have also found that it persisted probably to a later date.[5] But as a whole it seems typical of the early half of the third millennium, and it is apparently due to the great movement of peoples which, as we have seen, falls in about the middle of that era, that in Palestine there appears another kind of painted pottery which gradually displaces the first. This is a polychrome ware, using red besides black, both in a matt medium, and not only in geometric designs but also in natural representations, which are either drawn in full silhouette or in red outline filled in with red. We know its homeland from former research; it belongs to that North Syrian culture, which in its early stages embraced even Assur and Susa II.[6] In Central and Southern Syria and Palestine had existed in the meantime the other fabrics, known to us from their exported representatives found in Egypt. Once the polychrome North Syrian pottery was introduced into Palestine, it remained in use there for almost another thousand

[1] Sellin-Watzinger, *Jericho*, 106 with n. 1, where importations are excluded as a possibility to account for them.

[2] *Vide supra*, p. 82, n. 1.

[3] *Revue Syria*, 1921, pl. xviii, 2, 3: recognized as Cypriote by M. G. Gjerstad, loc. cit. 302, with n. 3. Here we need not make the reservation of p. 80, n. 4, for we are dealing no longer with the early wares, similar in Cyprus and Anatolia, but with developed and specialized types. Herewith falls the strongest support for the assumption of a red-ware culture in North Syria. (Prof. Myres in *Cambridge Ancient History*, i, 89 sq.)

[4] See *Journal of Egyptian Archæology*, xii, 80 sqq.

[5] *Vide supra*, p. 82, n. 6.

[6] Frankfort, "Studies," I, pp. 69–75; 88 sqq.

years.[1] It is typical of the country, which was unable to produce anything original in the field of arts and crafts, but simply went on repeating the last imported formula till a new impulse from abroad broke the inertia.

We have now completed our survey of the eastern Mediterranean coasts, which was necessary before we could describe the meeting of Asia and Europe in the Ægean. The southern coast we have to leave out of account. Of the early civilization of the Egyptian Delta we know practically nothing[2]; if any Mediterranean features prevailed there previous to the unification of the country under the kings of Upper Egypt at the beginning of the Copper Age, these features were inevitably absorbed and assimilated by the new civilization in which the Upper Egyptian elements naturally predominated to a large extent; it is these Upper Egyptian elements mainly which we know in predynastic times; and their thoroughly peculiar African character excludes any possibility of putting them in relationship with any Asiatic or Mediterranean civilization.[3]

Thus we return to Crete to review the phenomena which herald there the end of the Neolithic and the opening of a new age.

[1] Phythian Adams in *Quarterly Statement, Palestine Explor. Fund*, 1923, p. 73 sq. Where the strange ware with white and blue bands comes from I do not venture to suggest. According to Prof. Macalister (*Gezer* ii, 151), it does not exist in the earliest layers, and may thus have been introduced in the same period as the polychrome pottery. The latter has recently been studied for the *contents* of its decoration by H. Vincent, *Revue Syria*, 1924.

[2] See Scharffin *Or. Litt. Zeitung*, 1926, 719 sqq.; Ranke in *Sitzungsbericht d. Heidelberger Akad.*, 1924-5, No. 5.

[3] The Anatolian and Cypriote red ware has over and over again been brought into relation with the black-topped predynastic pottery (Omerod in *Ann. Brit. School Athens*, xvi, Woolley in *Liverpool Annals*, ix, 42; Myres in *Journ. Roy. Anthrop. Inst.*, 1903, p. 367 (but see *Cambridge Ancient History*, i, 90); Vincent, *Jérusalem sous Terre*, 31, 31). As stated already ("Studies," Part I, p. 95, n. 6), the black-topped Egyptian ware is but a variety of a peculiar red-ware production, which appears homogeneous all through the Nile valley up into Nubia. Prof. Petrie's and Mr. Brunton's work at Badari has now revealed an earlier stage of this typically native African ware than was hitherto known, in which we not only find more primitive shapes, but also an accidental mottling with black of the red wares, due to partial reduction, a proof of the incipient utilization of reduction and oxidization of the hæmatite in the slip for decorative purposes. There is therefore no possibility of bringing the black-topped predynastic ware, resulting from a peculiar red-ware production, into connection with the parti-coloured bowls in Anatolia and Cyprus, which arise out of a black-ware production. The shapes are, of course, quite different in Africa and Asia.

Chapter IV.—Asia and the Ægean in the Copper Age.

¶ 13. Once again we have to face the difficulty that our material does not record the actual changes which our regions underwent but merely the stabilized conditions resulting from these changes. Only if stratigraphical observations on one site provide us with material from successive stages of a settlement may we hope to find the change taking place as it were under our eyes. But in our case we have to compare finds from a variety of sites, and then each group of such finds is a complex recording the situation on its particular site at a given moment; and in that complex we have to divide what originally comes from different sources; we also have to separate what is *typical* of the period, what announces a *succeeding*, and what survives from a *former* epoch. Among the field-workers there prevails sometimes a strong scepticism against these "merely theoretical" proceedings. They are loath to divide what is found together, fearing to spoil preciously objective evidence. To them it may be said, that such a division, if at all acceptable, has to comply with the rule for all scientific argumentation, viz., that it must explain most by supposing least.

It is hardly superfluous thus to account for the method which we follow, in view of the extraordinary complexity of the Copper-Age remains in the Ægean. On the Greek Mainland we first find signs of what we shall soon recognize as Asiatic influence, together with features which have their origin in the two-fold migration from Central and Eastern Europe, phenomena with which we have already dealt in a former chapter for clearness' sake, though the great migration seems to fall slightly later than the beginning of the Anatolian expansion towards the west. On the islands we can only hope to find supplementary evidence, for to a large extent they only become inhabited as a consequence of the established relation with Asia; they cannot therefore inform us of its beginning. In Crete the conditions seem more favourable, for the island was large enough to sustain a population even under Neolithic conditions when trade played only a most subordinate part; and on the other hand it lies too far to the south to be immediately affected by the movement on the Continent.

Copper Age in Crete.

If, then, we start our inquiry from Crete, we find indeed that in Central Crete the Neolithic merges into a Subneolithic Period, in which copper appears occasionally; and the Subneolithic stage again assumes gradually an Early Minoan character. But this transition is only *gradual* in so far as old features do not disappear all of a sudden; it does not imply by any means that the new phenomena can be explained as the natural development of what existed already on the island. On the contrary, we find convincing evidence that most of these new features do *not* link up with the preceding period, but have their antecedent abroad.

Now the remarks with which this paragraph opened explain why, here again, the material which actually shows the transition is scanty. Let us therefore review the new features –pottery being as usual our main guide ; and if we note in the fully developed stages traces of a foreign origin, we may then be able to find the missing link between the phenomena in and outside the Ægean civilization.

If for a moment, we do not consider all subsidiary matter, we may say that the "Urfirnis"-ware on the mainland and the islands, the "Vassiliki" and the "white-on-black" Early Minoan fabric (precursors of the Kamarès ware) in Crete, are typical of the Ægean Copper Age. These wares are entirely peculiar to the Ægean from a technical point of view. But their shapes show as definitely as can be, that these at least are dependent on Anatolia.

Shapes. Very conclusive is the evidence of the beak-spouted jug ("Schnabel-kanne"), in itself already a specialized form for which one cannot claim an independent origin in both of the two neighbouring regions, where it appears within a short space of time. But in addition there is a most striking similarity in trivial details : in Anatolia, as well as in Greece, the handle of these jugs is stuck through the wall and emerges on the inside[1] ; it is turned like a rope,[2] or consists of two almost severed stems.[3] On both sides of the beak spout one finds pellets of clay ("eyes")[4] ; or such pellets are found where the handle is fastened to rim or body, and clearly imitate rivets of metal vessels.[5] One might, therefore, be inclined to uphold the view that only metal vessels were exported from Asia, and that on both sides of the Ægean, imitations would naturally be alike. Even such a theory would prove our point, viz., strong Anatolian influence affecting the west ; but we shall presently see that the technical antecedents of the new ceramics lie also in Asia Minor. Nor are pot-shapes derived from metal vessels the only points of resemblance on both sides. The beak-spouted jug itself occurs in two varieties : one with the neck upright on the body, and one with the spout coming out of the shoulder. The latter variety may be called the

[1] This is only to be observed in broken vessels. It is the rule in Early Minoan I jugs (Seager *Mochlos*, 7 ; *Annual Brit. School Athens*, x, 200). It occurs in Naxos (*Congrès Archol. Int. Athènes*, 1905, *Comptes Rendus*, p. 221, i.e. our Pl. V, 1), and survives in the Middle Cycladic Period (*Excavations at Phylakopi*, 94) ; it is usual at Bos Euyuk (*Athen. Mitth.*, 1899, p. 28), and at Sarilar (*Journ. Hell. Studies*, 1899, p. 34) ; and also in the red-polished Cypriote pottery of Anatolian descent.

[2] The same specimen from Naxos (see preceding note) ; specimens from Mycenæ in the Nauplia Museum ; and from Yortan (*Brit. Museum Catal.*, A 31, A 38).

[3] Bos Euyuk (*Athen. Mitth.*, 1899, p. 28), Hissarlik (*Schliemann Katal.*, n. 2358), Tiryns (*Photo Deutsch. Arch. Inst.*, 15616, 15506), Corinth (*American Journ. Arch.*, 1897, p. 319, n. 4) Hagia Marina (Specimen in the Chaeronea Museum).

[4] Bos Euyuk (*Athen. Mitth.*, 1899, pp. 28). Boyd-Hawes, *Gournia*, pl. xii, 6, with text. Seager, *Mochlos*, fig. 7, ii *n* ; ii *b* ; fig. 19, v *a*, fig. 50, 85. Xanthoudides, *Vaulted Tombs of Mesarà*, pl. vi, 5067 ; xix, 4274, 4155.

[5] Bos Euyuk (*Athen. Mitth.*, 1899, pl. iii, 177 and pp. 26, 32). Tiryns (*Photo Deutsch. Arch., Inst.*, 15616, 15506). From Arkalochori there is a painted specimen in Candia Museum. Naxos (see n. 1, and Athens National Museum inv. 6109).

side-spouted jug; and though it is not common in Anatolia, and is absent in the west and from among the earlier shapes, it is found in Cappadocia in a form exactly like certain Early Minoan jugs.[1]

But the beak-spouted jug is not the only shape common to Asia Minor and Greece, and therefore presumably of Asiatic origin, because it existed there in an earlier period, as the technique and an extensive local manufacture prove, while in the Ægean it appears suddenly, and cannot be explained from what precedes. The very same applies to the collar-necked vase with the domed cover ("Stülpdeckel"), well known in Anatolia,[2] made of silver in Hissarlik II,[3] and appearing in the Copper Age in the Ægean.[4] It seems to be correlated with the use of pairs of *vertical* tubular handles, which are also found on the silver specimen[5]; the Neolithic pottery in Crete and on the mainland had horizontally pierced lugs and handles throughout. Occasionally the vessels are given three-knob feet, a device typical of Yortan and Hissarlik, but never used in Europe, and soon dropped in the Ægean.[6]

It may well be the influence of silver vessels—the wealth of silver on the islands is astounding in this period[7]—which gave rise to the extensive use of footed calices

[1] Cf. Chantre, *Mission en Cappadoce*, pl. viii, 3, and a similar vessel in the Museum at Constantinople (which already struck Mr. Seager, *Transactions*, ii, 117), with *Brit. Museum Catal.*, A442, Seager, *Mochlos*, fig. 49, Nos. 73–75, fig. 50 Nos. 90, 92. It is just the side-spouted jugs which develop into the most fantastic shapes, and it has been suggested (Evans, *Palace of Minos*, i, 80; Hall, *Ægean Archæology*, 73, with n. 1) that the Egyptian ewers for ritual hand-washing (see Klebs, *Die Reliefs des alten Reichs*, 173, 5; with fig. 5, p. 8), which were originally made of copper, but also imitated in pottery, and had excessively long spouts, would have influenced the Cretan development This *influence* we may admit; the *origin* of the Cretan jugs however, lies in the East.

Mr. Childe (*The Aryans*, 28), noticing the resemblance, wants to explain the Cappadocian jugs as due to trade from the Ægean. That is no adequate explanation, because this type of jug persists into the white slip ware, *i.e.* a thousand years after it disappeared in the Ægean (see below ¶ 22). It is therefore more probable that Anatolia was its homeland, where it persisted, while in Crete it was absorbed in the course of the development.

[2] *Vide supra*, p. 58, n. 2 (*c*).

[3] *Katalog Schliemann Sammlg.*, 5859, 5860. Imitated in pottery, ibid., 2421.

[4] In Nauplia Museum, "Urfirnis" specimen from Tiryns and Mycenæ; Xanthoudides, *The Vaulted Tombs of Mesarà*, pl. xxv, 4291–3; *Brit. Museum Catal.*, A317; Evans, *Palace of Minos*, i, fig. 23, 24; cf. *Annual Brit. School Athens*, ix, 341; Ephemeris, 1899, pl. viii, 12; ix, 20.

[5] *Katalog Schliemann Sammlg.*, 5859–5861. In silver from Antiparos, *Journ. Hell. Studies*, v, 55; from Amorgos, *Athen. Mitth.*, 1886, pl. xi, bl.; from Paros, Ephemeris, 1898, pl. ix, 89; from Syros, Ephemeris, 1899, pl. viii, 5, 7, 8. Further, *American Journal of Archæol.*, 1897, p. 303, fig. 15, p. 312, fig. ii, 3; Xanthoudides, *The Vaulted Tombs of Mesarà*, pl. i, 419, *b*; *Brit. Museum Catal.*, A3 L2, A317; *Annual Brit. School Athens*, iii, p. 44, fig. 10, 12, 15, 16.

[6] Several vessels at Pyrgos (Ἀρχ. Δελτίον, 1918).

[7] In Euboea, *Papabasileios*, pl. iv, pl. xiii (silver coated dagger-handle); Antiparos: silver figurine found by Bent (*Journ. Hell. Studies*, v., 52); Amorgos: silver vessels, helmet and beads (*Athen. Mitth.*, 1886, p. 20 (C4, D3), and p. 24; Naxos: 200 silver beads (*Congrès Internat. d'Archæol. Comptes Rendus*, p. 224), and also silver-riveted copper dagger; Syros: diadem (Ephemeris, 1899, pl. x, 1).

of a particularly fine grey appearance, though black specimens occur as well.[1] In a more clumsy shape they were used in Hissarlik I[2]; but the use of metal made a more graceful outline possible, and the new vessels were again imitated in pottery, though the curved-in rim, typical of pottery bowls of Hissarlik I and II, is often maintained even then.[3] The Anatolian connections of the Early Ægean footed calix[4] would rather make one doubt the local origin of certain large burnish-decorated black calices found at Nirou Khani and Arkalochori in Crete in the Subneolithic Period;[5] there is no objection to seeing in them local creations; but the foreign origin of the related calices and the similarity between the burnish-decoration on the vessels under discussion and that used in Western Asia make an Asiatic impulse for this type at least probable. The same impulse would then have given rise to a rather rich local development in Central Crete, as it was well in keeping with age-old tendencies; we have seen that surface-finish was particularly cared for by the Neolithic potters,[6] and the burnish-decoration is merely an elaboration of surface-treatment.

Technique.

The burnish-decorated ware appears to have had a considerable vogue in the centre of the island[7]; but it is, significantly enough, in its *eastern* part, in the civilization best known from Vassiliki, that we see how *a continuous technical development leads from Anatolian antecedents up to "Urfirnis" ware on one hand, and "Kamarès"*

[1] Two of silver from Amorgos (*Athen. Mitth.*, 1886, p. 24, and pl. i, 4). Pottery specimens are common in Mochlos E.M.I. cemetery (Seager, *Mochlos*, p. 7). Evans, *Palace of Minos*, i, 58, fig. 17. In the Candia Museum are two from Mallia among the finds of the French School at Athens. See also *Transactions, Dept. of Archæol. University of Pennsylvania*, i, p. 212, fig. 2; Seager, *Mochlos*, fig. 22, vi, 11 (with small spout and rivet); Boyd-Hawes, *Gournia*, pl. xii, 12; from Paros, Ephemeris, 1898, p. ix, 15; from Naxos, National Museum, Athens, inv. 6117; from Syros, Ephemeris, 1899, pl. ix, 16.

[2] *Katalog Schliemann Sammlg.*, 263–267. From Bagdad railway, on the line between Panderma and Soma: Berlin Antiquarium, inv. 30677.

[3] *Katalog Schliemann Sammlg.*, Nos. 24–99; cf. n. 12, examples from Mochlos, Paros, Naxos.

[4] The Ægean form has *no* direct genetic connection with similar Egyptian vessels (lastly adduced by Evans, *Huxley Memorial Lecture*, 1925, p. 16 sq.), which also go back to Asiatic Prototypes (Frankfort, "Studies," I, 127 sqq.).

[5] Evans, *Palace of Minos*, i, p. 60. I have been unable, at Candia, to see any wilful imitation of wood-graining in the burnish-decoration, but found that these similarities were merely suggested by a careless execution of what was meant to be a purely geometrical design.

[6] *Vide supra*, pp. 54 sqq.

[7] Besides the calices quoted above (n. 5), a number of burnish-decorated vessels of various shapes were found by M. Xanthoudides at Pyrgos, N.E. of Knossos (Ἀρχ. Δελτίον 1918); these are, for instance, small tumblers (Candia Museum, inv. 7841, 7893), sometimes red instead of black, with sharply pointed horn-like lugs, just as occur occasionally on the calices. Even this detail finds an exact parallel in Anatolia, Schliemann, *Ilios*, 787, fig. 1546. A red pyxis in the shape of a truncated cone is also decorated in this way (Candia Museum, inv. 7473); but for the decoration it is identical with three from Naxos (Nat. Museum Athens, inv. 6100).

Clearly, in favour of our assumption that an Anatolian impulse brought this style of Cretan decoration about, is the fact that it is flourishing while the first metal is reaching Crete. See below, p. 93, on the date of the Subneolithic Period in Central Crete.

ware on the other. This is a fact of the utmost importance, for it enables us at once to understand the manifold and undubitable connections of the Early Ægean shapes with those of Asia Minor, while the accomplished techniques are so different on both sides. Now we have seen that the technical stage reached by the Anatolian ceramics in the Early Copper Age was just the transition of black-ware to red-ware production. In the Ægean now we find among the mass of purely Ægean material some carboniferous vessels—calices with and without burnish-decoration, and a number of red-polished vessels, still with carboniferous clay, in some instances, but with a thick red slip, hand-polished: at Vassiliki[1] and Gournia[2] some specimens of what we may consider proto-"sauce-boats"; from Pyrgos, in Crete, and from Amorgos another type of this vessel[3] already somewhat more like the Early Helladic II-III shape; at Gournia[4] and Zakro[5] a few cups and occasionally some jugs,[6] and a collar-necked vase.[7]

These examples,[8] all of primitive shape, establish the connection for which we were looking; within the more advanced Ægean ceramics they can only be understood as *survivals*, but they show that those developed ceramics are based on the very technique which we have found typical of Anatolia in the Copper Age. Even a peculiar development which Mr. Ormerod observed in Pisidia[9]—namely, that black fabrics are made, though the higher temperatures of the red-ware production are adopted—is paralleled in the Ægean. In Syros,[10] Naxos,[11] and Melos[12] is found a particular class of vessels, beak-spouted jugs mainly, which have a highly polished black surface, but in which the clay is buff on the break; the black surface is due to a final smoking towards the end of the firing, with stopped-up vents (Pl. v, 3–5).[13] Of course, such an archaic, artificial product does not exist for any length

[1] Seager, *Excavations at Vassiliki; Transactions Arch. Dept. University, Pennsylvania*, i, 217, class 1, cf. p. 215, fig. 5.

[2] Boyd-Hawes, *Gournia*, fig. 37, 7.

[3] Ephemeris, 1898, pl. ix, 7 (carboniferous with red slip); Candia Museum, inv. 7521, 7523.

[4] Boyd-Hawes, loc. cit., pl. xii, 18; fig. 38, 2.

[5] *Annual. Brit. School, Athens*, vii, 143, "like Cyprus red-polished ware."

[6] Boyd-Hawes, loc. cit., fig. 37, 6. Ephemeris, 1898, pl. ix, 20.

[7] Id., loc. cit., fig. 37, 2 (cf. *Transactions, etc.*, i, 181).

[8] We cannot expect many examples of the transitional stage (see opening remarks of this paragraph), the more so as a migration quickens considerably the temporal sequence of development (see below, in text). But see below, p. 107, n. 2, for transitional forms.

[9] *Annual Brit. School, Athens*, xvi, p. 98.

[10] Ephemeris, 1899, pl. ix, 2, 14, 20.

[11] National Museum, Athens, 6104 (three vessels).

[12] *Excavations at Phylakopi*, p. 86, first alinea; this ware belongs to the early period of the first *city* (cf. ibid., p. 244).

[13] The beak-spouted jugs are decorated with groups of finely incised vertical lines (pl. v, 4): cf. *Katalog Schliemann Sammlg.*, 2289. Then this spout is stuck on sideways either on collar-necked vases (Ephemeris, loc. cit., n. 14) or on open bowls, ornamented with a horizontal rope pattern in relief (Athens Nat. Museum, 6156, pl. v, 3); the handles are also treated in that way.

of time, but that it appears at all in the Ægean confirms again the view that the Anatolian wares arrived there in their transitional stage from black to red ware; had the latter been the exclusive fabric at the time of the expansion, then the rise of this class (corresponding to Ormerod's A3 in Pisidia) would be inexplicable.

The other Ægean fabrics, peculiar to that area, show once again that in a migration progress is made infinitely more rapidly than when the development takes place on one spot where it is encumbered, as it were, with the full weight of accepted local traditions. As the ancient Gothic language is considerably more "modern" than other Indo-European tongues (such as the Slav languages, for instance) whose users did not move so far and so fast, so the Ægean pottery is far in advance of the contemporaneous Anatolian wares. In Anatolia hand-made ware is still found well into the Second Millennium; even at Hissarlik the earliest wheel-made ware appears only in the second "Bauperiode" of the Second City; but the mottled ware of Vassiliki, though not made on a wheel, is always finished on what one might call a proto-tournette—some sort of support which is whirled round while the shapes receive their finishing touch. And the hand-made vessels disappear within the Early Minoan period. Also the pottery of even the First Early Minoan period is fired at a higher temperature and with a better regulated draught than the bulk of the pottery of Hissarlik II, for instance, which, as we shall see, comes well into the Middle Minoan Period. We have discussed already how the improved firing makes the use of a thick slip superfluous,[1] and in the Ægean, as in Anatolia, a *wash* is applied instead; that wash is the "Urfirnis." Its colour, blackish-brown in most cases, is again explicable when we remember at what stage (namely, in the transition from black ware to red ware) the Ægean pottery started its independent development; the Anatolian ceramics, in their slower homeland progress, displace the slip by a wash only when the red-ware production is already fully developed (Third Period, or Hissarlik II), and consequently they adopt a *red* wash. That the "Urfirnis" wash was really sepia-brown even at Vassiliki is shown by some vases there[2] and at Mochlos,[3] which are only partly covered with it; on the uncovered part, which is ornamented with incisions, the clean, light-buff pottery is left open; if the wash had been red and turned brown in the fire, the uncovered pottery, particularly apt to absorb smoke or gases, would, of course, show discolouring as well.

Vassiliki ware. Thus we have to consider the mottled Vassiliki ware as a special development within the scope of the "Urfirnis" pottery, and this tallies with observations I made in the Candia Museum; it is clear that the potters used a monochrome paint medium and that the mottling is produced by the fire itself. Each mottled space shows a dead yellow centre; there the glowing centre of a little piece of coal actually

[1] *Vide supra*, p. 64.

[2] Candia Museum inv. 6365.

[3] Seager, *Excavations on the Island of Mochlos*, fig. 48, No. 44; fig. 49, No. 71.

touched the pot, or was at least extremely near the surface. Round that burnt-out, dead, yellow centre there is a black ring of irregular form, that is produced by the smoke coming from those parts of the same bit of coal where it was not burning brightly. Round the black is, finally, the brownish or red background ; there the air played freely between the fuel, and if the atmosphere was continuously oxidizing, it would turn the brown of the ferruginous " Urfirnis " into red. The shape of the stains is therefore not only dependent on the initial disposition of the bits of fuel nearest to the pot, but also on the way in which the parts of one bit glow, burn brightly, and die out successively.[1]

The mottling is thus meant as decoration, but is not actually applied to the pot by the artist's own hand : if that were done we should not get the fantastical inimitable blots and spots of the mottling ; if it were actually executed design, some recognizable linear framework must needs be obvious. And there is one single vessel which shows such a framework and is therefore the unique exception to the rule. That is the famous pot from Vassiliki, always reproduced,[2] which shows a pair of wavy lines on each side ; but here the mottled effect is in itself at once less rich in shades, and I get the impression that the design is here executed with a bright burning branch. The same pot, however, shows that as soon as the desire for real design instead of mere amorphous play of colour is desired, as soon as the artist wants actively to decorate, that then the indirect method of purposely accidental mottling does not satisfy him any longer ; the spout of this exceptional vessel is left buff,

[1] The reproductions in Boyd-Hawes, *Gournia*, are extremely attractive, but misleading in so far as they suggest that two paint mediums were used. These *were* used, indeed ; not, however, by the Vassiliki potters, but by the artist who made the water-colour for the publication. A better idea is given by the colour plate in vol. i of the *Transactions, Arch. Dept. Univ. Pennsylvania* (pl. xxxv, reproduced in Evans, *Palace of Minos*, i, p. 77 F, G, H). Note that in the left-hand bottom figure the dead yellow centre has been covered over by smoke-stains ; the particular bit of coal responsible for that " centre of mottling " has, obviously, burnt hollow, so that after the extinction of its bright centre its outer parts, near the surface of the pot, continued to smoulder. The interpretation of the Vassiliki technique given in our text is founded on a careful study of all the material in the Candia Museum. Mr. Seager (*Transactions*, etc., p. 216) was right in principle ; the idea of the use of a second (black) pigment, proposed by Franchet (*Rapport sur une Mission en Crète et en Egypte*, 19 sq.), and by Prof. Binns (quoted by Miss Gisela Richter, *The Craft of the Athenian Pottery*, 45, with n. 4 ; also by Dr. Blegen, *Korakou*, p. 9, n. 1), need only be mentioned in front of the scores of mottled vessels in the Candia Museum to be disproved, It accounts neither for the amorphous designs, which are obviously *not* " designed " by human hands except in the one and only case mentioned, nor for the particular relation between the dead yellow, the red and the black on each vessel, which is subject to an enormous variation and which can, as I have tried, in every case be explained by the theory here proposed, one instance out of many being given in this note. The only regularity in the mottling consists in the fact that frequently three or four centres of mottling are spread, more or less at equal distances, on the pot surface ; this regularity derives, of course, from the initial disposition of the fuel round the vessel by the potter.

[2] Evans, *Palace of Minos*, i, p. 77*b* ; Fimmen, *Kretisch-Mykenische Kultur*, p. 133, fig. 122, etc.

and on it the potter has drawn a linear design with his unique brown paint-medium.

Painted wares. This decorative scheme answered to the purpose; and so we understand the introduction of the dark-on-light wares of the Second Early Minoan which survive into the First Middle Minoan Period. Foreign influences may have shown the way here again; we shall soon see that the Copper Age establishes connections all through the Mediterranean and not only between Crete and Asia Minor; so it may be more than a mere accident that certain jugs from Hagios Onuphrios[1] and Pyrgos recall in the quality of the clay and thin slip, as well as in the design, the red-on-white wares which were used in Central Greece already at an earlier period, but survive in the Copper Age.[2] On the other hand the deep-rooted Cretan love for a perfect finish could hardly be satisfied by this technique, and so we find that, although a compact slip is no longer essential because the firing reaches temperatures high enough to produce impermeable vessels without it, yet a rather thick buff slip is applied, only because the slip takes a good polish. On the polished buff surface geometrical designs are executed, in one or two cases, in oily red paint standing out from the pot-surface.[3] Here again I have been forcibly reminded of a non-Cretan fabric. I have not been able to differentiate these instances in any way from the early Syrian wares, which arrive in Cyprus early in the second half of the Third Millennium,[4] and we shall soon see that the idea of a relation in this case is not so absurd as is often thought. It is significant that the other vessels in this style show the same polished buff slips, but *not* the exceptional oily reddish paint: instead they use the Cretan dull brown paint as a medium.

Anyhow, whether foreign examples were utilized to obtain certain effects or not, the underlying idea of these dark-on-light wares falls, as we have seen, entirely in the line of the evolution of contemporaneous Cretan ceramics. A parallel attempt, viz. to substitute a "rational" ornamentation for the amorphous colour-schemes of the mottled ware is made by adding incised designs to the mottled or uniform body-paint.[5] This proceeding is quite unsatisfactory. But even the "dark-on-light" scheme, in which the buff background parsimoniously covered by the meagre geometrical designs produced an effect of bareness, was hardly congenial to the colour-loving

[1] Evans, *Palace of Minos*, i, 62, fig. 25.

[2] Vide supra, 11; a resemblance noted already by Sotiriades, *Revue d'Etudes Grecques*, 1912, 289. On the other hand, jugs and collar-necked vases like Boyd-Hawes, *Gournia*, pl. A3, fig. 38, 3. and *Ann. Brit. School, Athens*, vii, 144, fig. 52, with their Anatolian-Cretan shape and a simple design painted straight on the body without any interposed slip or clay, may easily be Cretan "inventions," in which the native "Urfirnis" (still matt) is used for designs instead of body-paint.

[3] Strikingly so the bowl in Seager, *Mochlos*, fig. 7, II l.

[4] Vide supra, ¶ 12, esp. p. 81 with n. 1; infra, p. 122 sq. and compare with the bowl quoted in the foregoing note Gjerstad, *Studies on Prehistoric Cyprus*, 149, n. 21.

[5] Seager, *Mochlos*, fig. 49, No. 75; fig. 50, No. 92. The same design appears in black paint, on polished buff.

Cretans.[1] In a third parallel attempt—parallel in essential, though it is made somewhat later than the other two—designs were applied in white on the top of the "Urfirnis" body-paint, and it is this scheme which gained rapidly in popularity as it combined the advantages of colour effect with that of "rational" designs; in fact, it displaced both the dark-on-light and the mottled techniques completely.[2]

In the beginning, there is some hesitation whether white-on-red or white-on-brown will be adopted,[3] and even white designs on mottled ground are found[4]: but the pure and strong contrast was chosen, and that done, both paints were improved with the colour effect exclusively in view, to which durability was completely sacrificed: the yellowish white of the former period is displaced by pure chalky white, which, however, adheres very badly, and instead of the ambiguous brown "Urfirnis" background, there appears a magnificent blue-black body-paint with metallic lustre. This is the final achievement of the Early Minoan Period on which the First Middle Minoan pottery, the immediate predecessor of the Kamarès ware, is based.

Central and Eastern Crete.

We shall still have to review this development in further detail; at present there remain some facts of a general character which are well worth our attention. There can be no doubt that the development outlined above is valid for Crete as a whole; all its stages can be instanced from any of the sites of which we possess even a moderately extensive material.[5] Nevertheless, the eastern part of Crete offers an immensely richer set of remains than either the north or the south, than any of the sites, in fact, which are later on centres of power and culture. In the beginning of the Copper Age the situation is entirely different: at Knossos, for instance, and in its neighbourhood, we find a not inconsiderable amount of material for Sir Arthur Evans' "Subneolithic" Period. But in the East the First Early Minoan Period develops straight away out of a simple Neolithic civilization.[6] Typical of the Subneolithic Period in Central Crete are the burnish-decorated vases; the large

[1] In so far the Vassiliki ware was already a true manifestation of the Minoan artistic mentality. Some other vessels from Mochlos show remarkable transitional stages. Candia Museum, inv. 6840, combines incised designs with others in white paint on "Urfirnis." The beak-spouted jug, No. 6334, has a decoration, which is essentially dark on light: some bands are in matt paint on buff; *on* these bands are painted again quirks in white paint.

[2] This is shown clearly by the stratification at Vassiliki (*Transactions*, etc., i, 21), which thus confirms by objective evidence our theoretical argumentation.

[3] Candia Museum, from Mochlos, 5258, 5347, 5469; from Vassiliki, 5252.

[4] Ibid., 5511; from Vassiliki, 5340, 5345.

[5] Even Vassiliki ware is not confined to so small an area as is generally thought; it is also found at Gournia (*Transactions*, etc., i, 193), at Mochlos (Seager, loc. cit., 96), and Palaikastro (*Brit. School at Athens, Supplementary Paper*, i, 5 sqq.), though at the two last-named sites the mottling is not very well developed, and the ware is mostly monochrome red. But the French school at Athens has, in its recent excavations of the Palace of Mallia, 20 miles east of Knossos found real Vassiliki ware (Candia Museum).

[6] Seager, *Mochlos*, 92 sqq. The suggestion that the East of Crete was populated by an overflow of Knossos and Phaestos shows only how strong a suggestive power the later glories of Central Crete have over the minds of scholars.

find of Pyrgos contained also a certain number of imitations of that decorative effect in paint.[1] Similar imitations, agreeing even in shape with the Pyrgos tumblers, occur in the Second Early Minoan Period in Eastern Crete.[2] That means, however, that the Subneolithic wares must have persisted long enough to have *served as prototypes* for the East Cretan pot-painters of Early Minoan II, when occasionally one of these curious objects chanced into their hands. And so we must assume that the Central Cretan Subneolithic Period is contemporaneous with the First Early Minoan in Eastern Crete, a fact, moreover, also proved by the goblets of the smooth (metallic) type; these are Subneolithic in Knossos and common in the First Early Minoan layers in the eastern parts.[3]

But what is the meaning of the statement that Early Minoan I in Eastern Crete was contemporaneous with the Subneolithic Age in the centre? Nothing but that the forces which brought about the Minoan civilization worked strongly and directly in Eastern Crete, but only indirectly in the Centre, where there was thus an opportunity for the Neolithic civilization to assimilate what faint action of the new forces might be felt, and to develop a transitional "in-between" stage. In the Early Minoan Period, the East of Crete is progressive, the centre is conservative.[4]

This fact stands forth in particular relief when we remember a good observation of Mr. Seager: the situation of most of the East Cretan settlements is such that their *raison d'être* cannot have lain in anything but in their good harbours. And as the existence of harbours points to intercourse with ports on the other side of the water, we may say that the rapid and consistent development of the Early Minoan Period in Eastern Crete is completely in keeping with the evidence which we discussed all through this paragraph, evidence showing that an Anatolian impulse lies at the bottom of the development of Ægean civilization in the Copper Age.

Crete and Egypt.

¶14. It is, perhaps, not superfluous to state here explicitly that we do not for a moment lose sight of the very peculiar mentality which has found expression in that part of the Ægean civilization which flourished in Crete. Far from not doing it justice, we think that the extraordinary originality and vitality of Minoan Crete stands out even more astoundingly when we realize that in its origin it was so closely related to another province of early culture which never rose so high. The fundamental character of the Cretan connections with Asia Minor in the Copper Age is perhaps

[1] *Vide supra*, p. 88, n. 7.

[2] *Transactions*, etc., ii, p. 126, fig. 9, *b*; p. 127, fig. 10, *b*, *c*.

[3] Evans, *Palace of Minos*, fig. 17. Seager, *Mochlos*, 7, 92. See further below, p. 101.

[4] Evans, *Huxley Memorial Lecture*, 1925, p. 14 sqq., gives interesting additional information on the Central Cretan Subneolithic, summing up: "Otherwise (there was found a copper axe—H. F.), the contents were too uniform not to be described as pure Neolithic . . . the phase of culture cannot fairly be described as chalcolithic." The author's guess that the axe might conceivably be an importation from Egypt can be substituted, of course, by the practically certain eastern origin, be it from Eastern Crete or from Anatolia.

best realized when we compare it with Crete's relations with the Nilotic civilization.[1] As we have set forth in detail[2], Sir Arthur Evans' brilliant hypothesis that the conquest of the Delta by Menes and the unification of the country under him and his Upper Egyptian successors would have driven a number of Delta dwellers in exile to the large island north of the Libyan Sea, is perfectly compatible with all our evidence on either side. Recently, the great explorer has elaborated his view : near Phaestos, on the south coast, he has discovered an ancient port at Komò, and he sees now in the large *tholoi* in the Mesarà plain, excavated by Dr. Xanthoudides, sepulchral monuments built by descendants of these African settlers.[3] This conclusion seems the more unavoidable since such beehive tombs are, with one exception,[4] only found in the southern part of Central Crete. But it is remarkable that the *contents* of these *tholoi* are so thoroughly Cretan ; we may perhaps put aside a few carvings,[5] stone palettes[6] and occasionally the shape of a

[1] A third source of foreign influence in Crete was the Cyclades, as we shall see (vide infra, pp. 144 sqq.), where a peculiar and characteristic civilization developed partly out of the same (Anatolian) roots as those from which the First Early Minoan Period sprang.

[2] Frankfort, "Studies" I, 115 sqq.

[3] Preface to Xanthoudides, *The Vaulted Tombs of Mesarà*, p. xiii, and compare Leo Frobenius "Der Klein-Afrikanische Grabbau," in *Praeh. Zeitsch*, viii, 1 sqq., especially fig. 24 and pp. 46 sqq. The striking fact is that both in Numidia and Crete a niche or "chapel" is found in or in front of the eastern side of the circular outer wall ; but in Africa there was never any connection between this niche and the interior, so that the heavy coping stone had to be lifted for every subsequent interment, and the niches must have served a purely ritual purpose. In Crete access was apparently found *through* the "chapel." It may be that further eastward in Africa a type with access through a niche once existed ; the remains of that type would then appear in such tumuli as Oric Bates found on the Seal Island in the Gulf of Bombah "immediately opposite the southern promontory of Crete."

[4] Near Krasi, an inland-village near Mallia ; Evans, *Huxley Memorial Lecture*, 1925, pp. 17–18.

[5] Evans, loc. cit., figs. 14–16 ; but line-drawings are entirely inadequate for judging similarities. Compare, therefore, Mosso, *Le origini della civiltà Mediterranea*, figs. 79*a*, and Xanthoudides, loc. cit., pl. xxxix, No. 171, with Petrie, *Prehistoric Egypt*, pl. II, 23, and p. 7, and Ayrton and Loat, *Predynastic Cemetery of el Mahasna*, pl. xi, all of ivory ; the men are unbearded and wear the pudendal sheath ; that it was also worn by bearded men is shown by the extraordinary statuette of the MacGregor Collection now in the Ashmolean Museum. Capart, *Début de l'art en Egypte*, p. 44, fig. 20, which has the same high-domed head, face and beard as the figure in Petrie, loc. cit., pl. 1, Nos. 1–8. The rough-bearded Cretan figurines, Mosso, loc. cit., fig. 28, are somewhat similar to those in Petrie, loc. cit., pl. i, 9 ; ii, 1–5, xlv, 44. The Egyptian examples are mostly better and more detailed ; but that the Cretan examples are of African descent is not only suggested by the general similarities, but also by the fact that they represent bearded men, while the beard was apparently never worn in Crete. The first Egyptian examples (Petrie, loc. cit., pl. i, 1–8) are without parallel in Crete ; there we find late and debased survivals. See below, note 53—Evans, loc. cit., fig. 27*a*, from the Mesarà (but bought, not found, and therefore of uncertain date), obviously reflects a negroid type.

[6] Xanthoudides, loc. cit., pls. xxi, xxxviii. The resemblance with the Egyptian palettes is not very great ; in Egypt we have perfectly flat slate palettes ; in Crete limestone blocks with a convex underside. Rightly, Dr. Xanthoudides compares them with small "tables" on four stumpy legs (Seager, *Mochlos*, p. 36, fig. 13, ii, 53 ; p. 59, fig. 28, xi, 5 ; Boyd–Hawes, *Gournia*,

vessel[1] as possibly possessing an Egyptian ancestry[2]; but the bulk of the objects, the vases, weapons, ornaments, are obviously native. Among them we find gold-work like that from Mochlos, similar stone vases, many side-spouted jugs, collar-necked vases, high "Schnabelkannen," fine grey ware with incisions, such as appear in the First Early Minoan Period at Vassiliki and in the contemporaneous Subneolithic Period at Knossos.[3] Here the difference between the influences exercised by Egypt and those emanating from the Asiatic mainland becomes clear. The Egyptian influences are such as can be explained by the arrival of a comparatively small number of highly cultured foreign settlers; they may have affected fashion of

pl. iii, 43 (56 is a palette). And these stumpy-legged tables, which often show traces of rubbing, do not compel us to refute with Dr. Xanthoudides the interpretation of them as colour-grinders. On the contrary we know that in Mesopotamia such "tables" are a variant of the colour-palettes, which otherwise appear as double or multiple vessels ("Studies," I, p. 65, with n. 5). These are also found on the islands, especially in the Mesarà (Xanthoudides, loc. cit., pls. iii, x, xi, xxiv, xxxi, lii), but also elsewhere ("Studies," I, pl. ix, 4), and a double vessel of Parian marble is found in Egypt (see below, p. 102). It seems to have been a matter of accident and taste which type prevailed in each locality, and on the whole there are as strong Asiatic as Egyptian parallels for the Cretan Palettes.

About the use of the Cycladic palettes (Ephemeris, 1898, pl. x, Nos. 11, 12, 14, 15; *Ann. Brit. School, Athens*, iii, 64, pl. v, 4; convex below, as the Cretan examples. Rightly, Mr. Childe remarks (*Dawn of European Civilization*, 44) that the complete absence of arrowheads precludes the explanation of them as wristguards, which is given in the text) we can be more definite; there are traces of colour, and also pestles have been found. On the probable use of these colours for body-paint or tattoo in the Cyclades, see Wolters in *Athen. Mitth.*, 1891, pp. 46, 52–3, 57–8.

[1] In her interesting study, "Dolmen und Mastaba," Mrs. Baumgärtel (p. 20 sq.) accepts the Libyan origin of the Cretan *tholoi* and claims for the spouted vessels of Xanthoudides (loc. cit., pl. xx, 4170, 4171, 4235, and pl. xxvii, No. 4148) a Libyan connection. The first group, however, is only a local variation of the large group of early Ægean vessels out of which the "sauce-boat" develops. The asymmetrical position of the handle, which makes an angle of 90 degrees with the spout, is certainly not African (cf. *Praeh. Zeitschr.*, viii, p. 77), but Anatolian (*vide supra*, p. 58, n. 2, f.) and early Cretan. The last-quoted specimen has indeed a quite exceptional round spout, and may well be the survival of the North African "Schnabelnapf" (ibid., p. 17, fig. 11), but obviously one must beware of generalizations; more or less deep bowls with short lateral spouts may occur independently in several places.

[2] It may be worth while to remind the reader that the use of these *tholoi* extended into the Middle Minoan times, and that, therefore, similarities with Egyptian objects from the IVth–VIth Dynasty appear, especially in the shape of stone vases and seals; the similarity in the latter case go back to a common Asiatic source (see Frankfort, *Journ. Egypt. Arch.*, xii, 88 sqq.). Obviously all these facts have nothing to do with the period with which we are concerned. Then, as in Middle Minoan and later times, Knossos will have been in relation with the Mesarà, and the Egyptian objects and imitations found in Knossos may well have reached it via the southern harbours. Perhaps one might add to the Libyan features in the Mesarà the stone bowl-shaped ladles (Xanthoudides, pl. xxii, top row, and Baumgärtel, loc. cit., fig. 11, No. 1).

[3] See below, p. 114.

dress[1] and armaments[2]; locally they introduce a particular kind of funerary ritual. The character of this Egyptian influence in Crete is exactly the same as that of the Sumerian influences in Egypt just during the rise of the 1st Dynasty.[3] Some features which are newly introduced, are finally assimilated by the fabric of native civilization; others, which are found incompatible, are repudiated[4] and soon disappear.[5]

[1] Most indubitable evidence is provided by the use, both in Libya and in Crete, of the pudendal sheath (Evans, *Huxley Memorial Lecture*, 1925, p. 21; vide supra, p. 95, n. 5; and see Von Luschan in *Globus* (Brunswick), 4 April, 1901, for interesting ethnological material), and of the striking appearance of women in male attire in certain ceremonies (Evans, loc. cit.). See also Dr. Mackenzie, in *Ann. Brit. School Athens*, xii, 233, sqq.; but it has to be remembered that the kilt was also used in Anatolia: Contenau, *La Glyptique Syro-Hittite*, 15, sqq. cf. review by Dr. Valentin Müller, *Orientalistische Literatur Zeitung*, 1925, 164, sqq. The method of dressing the hair is again uncertain for the same reason (Evans, loc. cit., p. 20), since, as we have seen in Part I of these "Studies" (p. 88 sq.), long hair arranged in various ways is worn in Western Asia in very early times.

[2] Most important here is the use of a "plain" bow and of a chisel-edged flint arrowhead, common in North Africa (Evans, loc. cit., p. 22). The figure-of-eight shield is an uncertain piece of evidence. The Hittites used it in later days, as the Egyptian reliefs show, and in consideration of the rôle it played in Cretan religion, one might be inclined to range it with the other Anatolian influences on Cretan religion (vide infra, p. 98, n. 1).

[3] Frankfort, "Studies," I, pp. 136–142.

[4] The growth of a beard, for instance, which the immigrants in the plain of Mesarà presumably introduced alongside with their small-bearded statuettes, never found favour in the eyes of the Cretans.

[5] Now we have dealt with the Cretan material, we may add to our analysis of the Early Dynastic history of Egypt (Part I, ¶45; especially p. 116). There we have considered the exceptional position of a predynastic state, which must have existed in the Western Delta, possessed an important harbour, and at first held its own against the Eastern Delta state (founded by Asiatic invaders presumably just after Sequence Date 60, the beginning of the Late Predynastic Period) to be conquered finally by Narmer-Menes, who therewith unified the country under his rule. Refugees from this Western Delta state then reached Crete. Now we find that the phenomena appearing in Crete as a consequence of their arrival point to *Libya* and to the *First Predynastic civilization*, to which the sheath and the best ivory statuettes quoted from Petrie's *Prehistoric Egypt* belong. As a direct connection they are excluded on chronological, as well as on geographical grounds, since Dr. Scharff has shown that the First Predynastic civilization is typical of Upper Egypt (in *Zeitschrift f. Aegypt. Sprache*, 1926); these similarities between Crete and the First predynastic civilization must go back to the Libyan element in the latter, which was long supposed to exist (on doubtful grounds as far as the comparisons between White Cross-lined and Kabyle pottery is concerned; Part I, p. 95, n. 6), but is now definitely proved by Dr. Scharff. We may consequently conclude that the Western Delta state, from which ultimately the influences found in Crete radiated, and which is therefore responsible for the similarities between Crete and the First Predynastic civilization, maintained throughout a Libyan character, while the Second Predynastic civilization, which Dr. Scharff has shown to possess Asiatic affinities, permeated the country and prevailed in course of time even in Upper Egypt. The Libyan character of the Western Delta state was therefore another feature which brought it into opposition with the Upper Egyptian conqueror who unified the country. This fits in well with an observation of Ed. Meyer (*Geschichte des Altertums*, i, 2, 3rd. ed., p. 130), that on a small ivory cylinder (Petrie, *Hierakonpolis*, i, pl. xv, 7) we see the fish with which the name of Narmer (Menes) was written, beating captives of Libyan type. See now also: Scharff, *Grundzüge der Aegypt. Vorgeschichte* 46 sqq.

Crete and Asia Minor.

How differently stands the case with the Cretan phenomena, which are dependent on Anatolia! Sir Arthur Evans has adduced a series of similarities with Asia Minor customs which are closely interwoven with religious life in Crete[1]; Prinz has come to similar conclusions in an iconographical study[2]; Valentin Müller in a very careful analysis of Hittite architecture, finds that there, again, are features common to Anatolia and Crete[3]; others, which we have just traced in so common a product as pottery, became no less essential in the material civilization of the mass of the island population; nay, these Anatolian features even predominate in the *tholoi* themselves in which Egyptian features are best represented. The Anatolian relations affect the very structure of Minoan civilization.

It is certainly reasonable to suppose that the Cretan similarities with Anatolia ultimately go back to the arrival of Anatolians in Crete; it is entirely impossible to decide whether it was their number or merely their cultural superiority which led to such a thorough impregnation of incipient Minoan civilization with Anatolian features, the Asiatics perhaps finding a well-prepared soil in the Cretan mentality, if a primordial relationship, and, consequently, a similar mental disposition, existed between the populations of Crete and of the Asiatic mainland.

Irrespective of the possibility of such a primordial relationship about which little can be said, we may attempt to define somewhat more closely from which

[1] Evans, *Palace of Minos*, pp. 3–6. The main features are: the worship of a mother goddess with her son-companion; the tradition of a Labyrinth and the Carian cult of Zeus Labraundios, also the arrangement of certain rooms in the Palace of Knossos with apparently ritual purposes, arrangements paralleled in Pisidia.

[2] In *Athen. Mitth.* xxxv, p. 149 sqq. especially 165 sqq. Note the conclusion on p. 175 that the similarities are such as point to a common starting-point in the beliefs of related people, *not*, however, so detailed as to suggest borrowing.

[3] In *Athen. Mitth.*, xxxii, 97 sqq. I should not like to endorse his view that the "Konjunktiver Hoftypus" derives from the Mediterranean, and with other Cretan features would have reached Boghazkeui as a consequence of Shubbiluliuma's conquest (loc. cit., 161, 167). It is too fundamental a feature for one to be able to imagine its adoption by the Hittites at so comparatively late a period. More probably it is an Anatolian type which reached Crete with the westward movement in the beginning of the Copper Age; that would explain its absence in Northern Syria; and the Neolithic houses at Knossos *and* in Eastern Crete (*Ann. Brit. School*, xi, p. 260) offer indeed no elements which would naturally lead to such a development. On the other hand the late Early Minoan (or perhaps Middle Minoan) oval house at Chamaizi, in *Eastern* Crete, contains, as Noack (*Ovalhaus und Palast*) has shown, the elements of the type of palace here under discussion, even if one admits that its *outer* form was determined by the site on which it was built. The Maltese megalithic buildings and the much-quoted pyxis from Melos represent the African (Mediterranean) "kraal" type, a gathering of round huts. There may, therefore, in this case be a convergence of originally different types.

The combination of the "Konjunctiver Hoftypus" with more primitive features at Boghazkeui ("Einschachtelung des Palastes in einem Ring von Nebengebäuden; Langraum, nicht breiträumige Kammertypus") would be a peculiar achievement of the Hittite civilization for the requirements of which it is well adapted. The northern affinities of these features would be again explained if we accept Mr. Childe's thesis that the Indo-Europeans came from Southern Russia, to which Val. Müller (loc. cit., 168) also ascribes them.

particular part of Anatolia the wave which reached Crete in the Early Minoan Period started. We have seen that the Anatolian civilization of the Copper Age was homogeneous throughout the period, and we have adduced comparisons of Ægean forms with specimens from a large number of sites. But this homogeneous Anatolian civilization contained, nevertheless, local varieties, a fact which need not astonish us if we remember how extensive was its area. We have already seen that Hissarlik II, for instance, assumes rather an exceptional position, while the related inland site of Bos Euyuk has a more general Anatolian character. I feel inclined to see in South-Western Asia Minor, the region which colonized Cyprus, the source of Anatolian influences which are manifest in Crete. This would explain how, with this westward movement, some Syrian vessels eventually reached Crete[1]; and the even more important fact that the very earliest Cypriote vases, the immediate descendants of a Pisidian stock, show similarities with Cretan Early Minoan wares which cannot be explained by direct intercourse, but are intelligible as derived from a common source of origin for the subsequently diverging developments.[2] And it is also in South-Western Anatolia that most religious traditions survive which Sir Arthur Evans has connected with Crete. Cycladic evidence, as we shall see, leads to the same conclusion.[3]

Toponomical evidence.

Finally, we must adduce here conclusions reached by an entirely independent line of research, which are in most perfect keeping with our results. Fick, continuing the fundamental work of Kretschmer, concludes: "Aus dieser weit- und tiefgreifenden Uebereinstimmung in den Ortsnamen geht mit voller Gewissheit hervor, dass die 'Urkreter,' die ältesten Bewohner Kreta's, und die Kleinasiaten, ins besondere die Bewohner des Südwestens von Kleinasien (Karien und Lykien) eng mit einander verwandt, Glieder desselben Völker-und Sprachstammes gewesen sind."[4] The study of the origins of Cretan ceramics has led us to the same conclusion. We have only in so far to restrict Fick's statement that it is not the Neolithic inhabitants of Knossos, the "oldest inhabitants," but definitely

[1] Vide supra, p. 92. They may have reached Cyprus occasionally, but they did not affect Cypriote ceramics, which did not leave the scope of the red-polished ware manufacture, recently introduced. Only when the high pressure in Syria just after the middle of the Third Millennium caused an overflow in all directions, the actual arrival of Syrians in Cyprus caused, as we have seen (vide supra, p. 83), a revolution in the native ceramics on the basis of the Syrian dark-on-light technique.

[2] In these earliest Cypriote wares we find a closer similarity to the Vassiliki beak-spout than anywhere else in Northern Anatolia: see Gjerstad, *Studies on Prehistoric Cyprus*, p. 91, jug No. 1, where also the handle goes through the wall; Bowl No. 4 (ibid., 90) and more clearly even the the British Museum Example (*Corpus Vasorum*, fasc. I., pl. ii, 1) may well be the "Urform" from which the Ægean "sauce-boat" develops. Parallels to the Cretan beak-spout are found elsewhere in Anatolia as well; e.g. *Brit. Museum Catal.*, A36, from Yortan.

[3] For Crete, see p. 98, n. 1; for the Cyclades, p 110, n. 2.

[4] Fick, *Vorgriechische Ortsnamen*, 37.

the Early Minoans, with their Vassiliki ware and related fabrics, who are the Eteocretans.[1]

Other evidence has led us to see the starting-point of the westward movement in South Western Anatolia, and it is exactly there that Fick finds the philological parallels.[2] Finally, we have seen that Eastern Crete is the hearth and real homeland of the Early Minoan civilization, where it develops earliest and most vigorously out of its Anatolian antecedents. We shall presently see that in the succeeding period the centre takes the lead and the east falls back into insignificance.[3] But it is in these easternmost regions, only distantly influenced by the subsequent development, that the Asiatic Eteocretan language survived longer than elsewhere.[4] No more complete agreement amongst two independent lines of research can be desired.

Chronology. Before we leave Crete we have still to answer a question, which has to be put to the Cretan evidence of all periods : What are the conclusions of the preceding analysis for the comparative chronology of the Near East ? For in each period the Cretan material known to us in its consecutive development enables us, either where it appears abroad in foreign surroundings or where it contains foreign importations, to connect the stages of Western Asia's development with the consistent scheme of Egyptian dynasties.[5] And in our case, too, the Cretan material allows us to make a

[1] The Neolithic population is absorbed by these. If it should be proved that Indo-Europeans, or at least Illyrian-Phrygian tribes, were as early as this period in the Northern Balkans, then some of the Neolithic Cretans could be identified by the Kydones, who later only survived in Western, and parts of Central Crete (Fick, loc. cit., 16 sq. and especially *Hattiden und Danubier*, 36 sqq.). The Illyrian-Phrygian affinities of their speech led Fick to derive them from the head of the Adriatic, where we found before (vide supra, ¶8) relations of some of the distinctive Neolithic pottery. If one does not want to accept this identification, the case of the Kydones is at any rate an interesting parallel for what we surmised for the Neolithic Period. But see below, p. 174.

[2] Fick, *Vorgriechische Ortsnamen*, 25s qq. and especially 36. Curiously enough, the affinities of the names connected with the later centre of Minoan culture (Minos, Knossos) are not found, like those of the other names, in the Western but in the Eastern of the two South-Anatolian linguistic groups distinguished by Kretschmer (*Einleitung in die Geschichte der Griechischen Sprache*, 370–400). It may be that Fick is right (loc. cit., 37) in assuming that a group from somewhat further east reached Knossos after the arrival of the bulk of the Eteocretans, but there is no archæological evidence to substantiate this view and as the Phrygians had at this time not yet driven a wedge between the Carians, Lydians and Mysians, on the one hand, and the eastern group on the other, and as further Pisidian parallels of Eteocretan names exist, it is just possible that the difference is accidental and that after all the godfathers of Knossos hailed from the same parts as the inhabitants of Eastern Crete ; it seems, therefore, better to leave the matter open at present.

[3] Vide infra, pp. 136 sqq.

[4] Fick, loc. cit., 23.

[5] This is a most important consequence of the Cretan discoveries ; for the Near Eastern finds are now so strongly cross-dated in several of their various stages, that the chronology is no longer a subject only to be decided by scholars in one of the particular fields, for instance, Egyptologists. Thus any chronological scheme which proposes to place the Egyptian Middle Kingdom one Sothic circle (1,460 years) backward, cannot for a moment be considered seriously, as the second Middle Minoan Period is by evidence from Kahun and Abydos, definitely bound up with the second half of

very important statement: the rise into power of the First Egyptian Dynasty, the unification of the country under Menes, falls considerably later than the Asiatic expansion towards the west. For the phenomena which we could, with Sir Arthur Evans and Dr. Xanthoudides, consider to be due to the arrival of Delta refugees in the Mesarà plain, appear in an advanced Early Minoan context. There is no small difference between, on the one hand, the beginnings of the Early Minoan Age from local Neolithic survivals, fertilized by Anatolian influence, such as we could observe them to be at Mochlos and Vassiliki,[1] or the parallel, more conservative, development in Central Crete, which is called Subneolithic, and, on the other hand, the culture evinced by the *tholoi* in the Mesarà plain, where the fully developed Early Minoan shapes and the dark-on-light technique prevail. The fact that these ossuaries remained in use for centuries (there were hundreds of interments),[2] and that the earlier remains were put aside from time to time, does not suffice to explain the almost complete absence of objects earlier than Early Minoan II. If the *tholoi* were constructed in the First Early Minoan Period, we should expect to find at least broken remains of that period in considerable numbers. Instead, we find only a few stray pots which antedate the Second Early Minoan Period; they are unbroken, and belong to the grey incised wares, typical of the Subneolithic Age of Central Crete.[3] The evidence from Eastern Crete has already given us the conviction that this Central Cretan Subneolithic Age is contemporaneous with Early Minoan I, and overlaps even with what is Early Minoan II in the progressive part of the island.[4] When the far-off eastern parts afford that evidence, we need not be astonished to

the XIIth dynasty, while on the other hand, a recently found cylinder (Evans, *Palace of Minos*, I, p. 197, fig. 146) confirms the view that the Hammurabi dynasty belongs to the same period For the Hyksos and all subsequent periods we have just as closely interwoven a group of phenomena. Thus any change in the chronology of a single region would pull apart stages in the consecutive development of the others; similarly our result would be quite chaotic if we were to accept Prof. Borchardt's recent attempt (*Die Annalen und die zeitliche Festlegung des alten Reiches der Aegyptischen Geschichte*, 1919) to place the beginning of the Ist dynasty in the end of the Fifth Millennium. Neither Egypt nor Mesopotamia, Syria or the Ægean provide the material to fill the colossal gap thus created between the beginning of the Copper Age and the Middle Kingdom in Egypt. See, moreover, the criticism of Prof. Peet (*Journal of Egyptian Archæology*, vi, 149 sqq.) and Prof. Ed. Meyer (*Die ältere Chronologie Babyloniens, Assyriens und Aegyptens*, 1925), which condemn the new theory on its own merits. That even after twenty years of fresh discoveries the brilliant and fundamental work of Ed. Meyer (*Die Aegyptische Chronologie, Abhandl. der Berliner Akad.*, 1904, *Nachträge*, ibid., 1907) is still entirely satisfactory (though one cannot be sure of one or two centuries either way), is as scientific a proof as we can hope for, that his chronological scheme roughly conforms with the truth. See the latest correction by Scharff, *Grundzüge der Aeg. Vorgesch.*, 50 sqq.

[1] Seager, *Mochlos*, p. 92 sq.; vide supra, p. 93.

[2] Xanthoudides, *The Vaulted Tombs of Mesarà*, p. vi sq. and p. 7.

[3] Id., loc. cit., pl. i. Vide supra, p. 96.

[4] Vide supra, p. 94.

find vessels of so-called "Subneolithic" technique in the Mesarà.[1] Thus the founding of the *tholoi*, and consequently the arrival of the Nilotic refugees and the unification of Egypt under Menes and the beginning of the Ist Dynasty (between 3400-3200 B.C.) are contemporaneous with at least the beginning of Early Minoan II. Hissarlik I, Yortan, and Early Minoan I thus antedate the First Egyptian Dynasty; and so do, in the south-east, the first civilization of Susa, with its Mesopotamian descendants, and the (subsequent) first appearance of the Sumerians.[2]

Collateral evidence confirms this view. The Copper Age starts very noticeably in Egypt in the Late Predynastic Period (Sequence Date 60–63).[3] Between that point and the unification of the country (which Petrie puts at Sequence Date 79) lies that most interesting period of incipient intercourse in which the developing civilizations first meet. What we can with more or less certainty know of this period is discussed in Part I of these "Studies." If we have been able to discover some hardly expected intercourse through the Red Sea between Egypt and regions further east, that is because our evidence from Upper Egypt is by no means scanty. The absence of early remains from the Delta, however, reduces our insight into the earliest traffic in the Mediterranean to a minimum. We find it reflected in the Early Minoan stone vases, which point to Egyptian prototypes.[4] How much is lost there we may suspect if we realize that in this period Cyprus was colonized by Southern Anatolians, who also reached Crete, where even an occasional Syrian vessel may have gone astray, while copper weapons spread all over the Near East, and the Greek mainland and Ægean islands were deeply affected.

A curious sidelight is thrown on the activity of the Ægeans by a find in Egypt, where, in the protodynastic cemetery at Abusir el-Melek, occurs a double vessel of

[1] A small vase of this ware with two pairs of vertically pierced lugs is in the Nauplia Museum among Early Helladic wares from Mycenæ. This confirms, of course, what is said in the text on the date of the Central Cretan "subneolithicum." On the possibly Clycladic affinities of this ware, see below, p. 114.

[2] Frankfort, "Studies," I, pp. 117–142. We have shown that in late predynastic and in protodynastic times similarities with the earliest Sumerian civilization appear in Egypt. The arrival of the Sumerians in Mesopotamia must, therefore, have antedated the First Egyptian Dynasty.

[3] Vide supra, p. 18 sq.

[4] Evans, *Huxley Memorial Lecture*, 1925, figs. 7, 8; *Palace of Minos*, I, 165 sq., figs. 23–35. Evidently there are two possibilities as regards the appearance of these vessels in Crete; they are either brought by the Delta-emigrants at the beginning of the Ist Dynasty, or they are due to earlier trade and intercourse. The latter seems to me the best explanation, for the shapes of these vessels fit in better with those used in the beginning of the late predynastic Period in Egypt (Sequence Date 60–63) than with those of Early Dynastic times. Moreover, the centre of these refugees, in the Mesarà, does *not* contain these Egyptianizing types. For the other explanation one has to surmise that early fine types of stone vases persisted in the Western Delta for a time after they are in disuse in Upper Egypt. But see p. 103, n. 1.

an unquestionably Asiatic type, executed in Parian marble.[1] Incidentally, this find confirms our chronological statements, for obviously some time had to elapse between the first population of most of the islands, which we shall find to coincide with the beginning of the Copper Age, and conditions sufficiently developed to make export trade (be it of the raw material, or of the imitations of Asiatic vessels in that native material) to Egypt possible. This period of development is the First Early Ægean Period, and in Egypt the late predynastic (Sequence Date 60/63–79).

[1] *Mitth. d. Deutsch. Orient. Gesellsch.*, 30, Abb. 18. The *multiple vessels* are certainly Asiatic; they are a common feature on early Sumerian sites ("Studies," I, 65) and their shape is the prototype of a cuneiform sign. Seeing that some of the multiple vases are wholly or partly theriomorphic, *Mém. de la Délégation en Perse*, xiii, pl. xxxviii, 10; xxxiii, 12; "Studies," I, pl. ix, 4), I treated the multiple and theriomorphic vessels as one group ("Studies," I, 111). Mr. Glanville has acutely criticized my views as far as the theriomorphic vessels are concerned (*Journ. Egypt. Arch.*, xii, 53 sqq.). Certainly the stately array of these which he publishes out of the rich collection of the British Museum and which hail from all parts of the globe, convincingly show that even the special type of theriomorphic vases which has a rimmed opening in the back may arise independently in various regions (loc. cit., pl. xiv-xvi). But we have to account for the *combined appearance* of theriomorphic *and* multiple vessels in three more or less *connected* regions, viz., the Ægean, South-West Persia (Susa), and Egypt *in about the same period*. I have suggested North Syria as a possible centre of diffusion, because in Susa these vessels appear concurrently with pottery of North Syrian affinities, and also because such a centre would explain the geographical distribution of the vases. But, as Cappadocia, Armenia, and North Syria are practically unexplored, I have adduced evidence from various periods that in the *surrounding* regions theriomorphic vases are often found, implying that it is plausible to assume the persistence of the tradition in the centre all through. The one object found in North Syria itself (the bird-vase from Meskineh, "Studies," I, ix, 2) can certainly not be entirely separated from the Susian examples (as Mr. Glanville does, loc. cit., p. 63) on the strength of the difference in receptivity; in one part an old type may persist, while in other districts degeneration may soon set in. As long as no excavations are carried out in the regions here concerned nothing more definite can be said.

Now Mr. Glanville has conclusively shown that the Egyptian material *by itself* does not require the postulation of foreign influence in order to be intelligible. But does an Egyptian origin explain satisfactorily the non-Egyptian phenomena? That cannot be asserted. It may be that we must separate the multiple from the theriomorphic vases. The multiple vessels are certainly Asiatic ("Studies," I, p. 111, n. 5); the Egyptian examples never antedate the Ist Dynasty. They are also found in the Ægean (vide supra, p. 95, n. 6), and Ægean specimens even reached Egypt, as we have seen. It still seems most probable that the theriomorphic vase may have spread together with the multiple one, and found a particularly favourable field in Egypt, where the native tendencies (see, for instance, "animal-plastic" on the rims of white-cross lined bowls, *Zeitsch. f. Aegypt. Sprache*, 1926) eagerly grasped the new opportunity for expression. In that case such vessels must have reached Egypt at the very beginning of the Copper Age, *i.e.* about S.D. 60, which, as Mr. Glanville remarks, early though it is, is yet a low date to which to bring down such excellent vessels, as *Journ. Egypt. Arch.* xii, pl. xii, 1–3, and "Studies," I, pl. ix, 2. But the other vessels of stone and pottery can all be dated after Sequence Date 60, and now we may even be compelled to admit that the two fine vessels mentioned above come down to within this same period, and that their style has persisted, therefore, later than is generally thought; for a recently found flat-collared vase from Knossos (Evans, *Huxley Memorial Lecture*, fig. 8) seems of the same type as the British Museum bird-vase; and the Knossos vessel cannot have been brought earlier into Crete than Sequence Date 60–63 if we compare loc. cit. fig. 7 which is typologically "later," and was found *immediately above* the

At the same time we catch a glimpse, through this find at Abusir el-Melek, of the important part played by Ægean middlemen in the Eastern Mediterranean already in so early a period. And to the islands and the Greek mainland it is therefore now time to turn.

Cyclades and Mainland.

¶15. When in 1883 J. Theodore Bent "undertook to visit the Cyclades one by one," he was deeply impressed: "In every island of the Ægean Sea, on almost every barren rock I might say, are found abundant traces of a vast prehistoric empire; and if the race was not far advanced in the arts of civilization, it must, at all events, have had great numerical force; and when I say that there are now twenty-two inhabited Cyclades, some of them having a population of only a few hundreds, I may as well add that in those prehistoric times there must have been at least fifty thickly inhabited islands, most of which are now visited only in summer by herdsmen with their flocks."[1]

First Early Cycladic Period.

Stranger still becomes this impression of past greatness when we review its remains, and realize that they all belong to one short period; they are Early Cycladic; nay, the majority of them, or at least those types which we find most widely distributed, belong exclusively to the earliest part of the Early Cycladic Period. Yet this remarkable fact is easily explicable. The wealth of these barren islands, or even the possibility that they should hold any population at all, was dependent on just those external resources which trade and transport traffic provide. In the very

Neolithic layers at Knossos. Obviously carefully executed and rougher types existed side by side. In Petrie's table (*Diospolis Parva*, pl. iii) the flat-collared squat vase comes also down below Sequence Date 60.

If one refuses to accept this view, one has to accept one of the two other possibilities which seem to me less satisfactory. One can assume that the device was first made in Egypt and spread from there to the Ægean, North Syria, and Susa, but for some reason is not found in Sumer at all; in Susa and on the islands it would then have overlapped with the multiple vases, and have in both cases given rise to the multiple type with more or less theriomorphic features. The assumption of such wide-spread Egyptian influence, however, based on the doubtful evidence of *one* vase-type only, and not corroborated by any other material (contrary to our first theory), seems very hazardous indeed. A third hypothesis would be to assume an independent origin in Asia and in Egypt of the theriomorphic vase; only the multiple vessel would then have spread from Asia in the Copper Age.

A word may be added about the possibility of deriving the camel-vase found at Abusir el-Melek from Asia: At Gezer camel bones are rare before the Middle of the Second Millennium, but they are occasionally found, as also are their clay imitations (Macalister, *Gezer*, ii, 9); and they are also found in the Ukraine with the remains of the late Neolithic Tripolje culture. The absence of references in cuneiform texts (Glanville, loc. cit., p. 58, with n. 3) is, therefore, not strong enough evidence to the contrary, and may, perhaps, be explained by assuming that the Bedaween caravans exclusively were using the camel in the Third Millennium. They would hand over the wares they transported to the trains of asses in service of the Babylonian traders, and the camel would therefore not come within the scope of Babylonian documents.

[1] *Journ. Hell. Studies*, 1884, 42 sqq. See for list of finds on the Cyclades: Fimmen, *Kretisch-Mykenische Kultur*, 13 sqq.

beginning of the Copper Age, with the contact between Europe and Asia just established, a lively intercourse sprang into being. We have found its traces in Cyprus, Egypt, and Crete. In the beginning there seemed to be uncounted possibilities. Haphazard and adventurously irregular these first communications must have been, and the Cyclades, in their intermediate position, became important stations for sailors and traders. But this state of affairs could not last long; the most elementary needs of trade and intercourse, security and efficiency based on accumulated experience, would soon lead traffic into fixed channels and to certain centres. Hissarlik, Melos, Crete gained predominance naturally by the mere fact that their situation or resources made them fit for the rôle of emporium. Then Amorgos, Paros, Antiparos, and all the numerous islands to which Bent and Ross refer, fall back into insignificance. Naxos, perhaps because of its copper and emery, Siphnos with its gold, and Syros could hold their own somewhat longer. Melos found in its obsidian a lasting source of wealth. But Bent's "prehistoric empire in the Ægean" appears and passes like a spectre in the very beginning of the Copper Age.

The island population was from the first mixed in the extreme[1]; and, in fact, we would expect it to be composed of elements from all the surrounding regions. Thus there was no opportunity for any one tradition to prevail in the civilization which ensued; and as vitality was apparently not lacking in the new community, it easily succeeded in creating what suited its needs. So we find the Early Cycladic civilization assuming very pronounced characteristics throughout. Its marble "idols" belong, no doubt, to the widely spread family of "mother-goddess" statuettes, elsewhere almost exclusively made of clay. But the newly obtained medium, marble, was at once used for a most peculiar and unparalleled expression of the old idea. Just so we find in the earliest period a pottery in use which is entirely typical of the islands. It is a rather coarse, merely utilitarian ware, reddish on the break and extremely gritty, and, notwithstanding the polish, the vessels would appear repulsive were they not entirely covered by close patterns of incised designs from which, their most common motif, the whole class of earliest island pottery was called "herring-bone" ware. The firing is indifferent. Smoke stains often occur; but there is no attempt to produce black wares. We have found that some of the early shapes, as the bulgy

[1] Dr. Stephanos, who, unfortunately, died before he had published his important material, gave some account of it in *Comptes Rendus, Congrès Intern. Arch. Athènes*, 1905, p. 225. Skulls from Naxos are mesocephalic, from Paros, Oliaros and Siphnos hypobrachycephalic, from Syros dolichocephalic and mesocephalic. Compare, further, the fine marble head in Hall, *Ægean Archæology*, pl. xiv, 1, with Von Luschan, *The Early Inhabitants of Western Asia*, pl. xxiv, 2. Shape of skull, projecting eye-brows, nose, mouth and chin are practically identical. But the Kurds, to whom that man belongs, seem to be somatically Nordics, linguistically Indo-Europeans (loc. cit., 228, sqq.). On the other hand, I long felt inclined to see in the curious way, in which in the more elaborate island-figurines the head is rendered, which ends in a high point, attempts to render the Armenoid skull, and Prof. Myres quoted by Mr. Woolley, seems to agree here. (*Liverpool Annals*, ix, 48.)

vessel with conical neck, and the pyxis, are paralleled in Europe.[1] The appearance of the Danubian spiral ornament and of the "Kerbschnitt" also fall within this earliest period[2]; Asiatic influence, on the other hand, becomes evident in the presence of simple jugs with modest attempts to produce a beak-spout,[3] pairs of vertical tubular handles,[4] proto-"sauce-boats,"[5] "Stülpdeckel" with rough anthropomorphic features,[6] and occasionally incised designs, which are incompatible with the "herring-bone" design, and find their nearest parallel in Anatolia.[7] We have quoted already the occurrence of vases with a thick red polished slip, which forms part of the evidence showing that in Anatolia lie the antecedents of Ægean ceramics as a whole[8]; the evidence of weapon shapes, always somewhat inconclusive, points in our case also unmistakably to Western Asia and Cyprus[9]; and metal,

[1] Vide supra, p. 49.

[2] Ibid., p. 50, n. 1.

[3] *Journ. Hell. Studies*, 1884, fig. 12.

[4] *Brit. Museum Catal.*, A 317. *Ephemeris*, 1819, pl. ix, 9.

[5] *Ephemeris*, 1898, pl. ix, 7; 1899, pl. x, 9.

[6] *Athen. Mitth.* 1886, Beilage 2, cl. Nat. Museum Athens, No. 6113.

[7] *Ephemeris*, 1898, pl. ix, 5. Cf. *Katalog Schliemann Sammlg.*, 2297, and many Yortan examples (Berlin Antiquarium, inv. 4330, &c.).

[8] Vide supra, p. 89.

[9] The value of the material itself insures that metal weapons are used for long periods which accounts for the fact that very different types are sometimes found in one grave together. Moreover, as their shape is determined by utilitarian motives, the range of possible types is not very great, while the ornamentation in which the craftsman is left free, and which is therefore so valuable as defining the cultural agencies which determine his *milieu;* is mostly confined to sheath and handle, which are perishable. Though more often than not weapons are therefore of dubious value as archæological evidence, it seems that in the case of the Cyclades we have definite proof of an Anatolian shape in the dagger with the long bent-back tang and two holes in the blade near the midrib. The hooked tang is typical of Cyprus (*Handbook, Cesnola Collection*, 4616–34; Gjerstad, loc. cit., pp. 234 sqq.); but the holes do not occur there at all (those in the very worn specimen *Athen. Mitth.*, 1886, Beilage I to p. 209, No. 16 are rivet-holes), but in Anatolia we find ample perforated specimens with and without a tang, exactly as on the Cyclades. Compare *Ephemeris*, 1898, pl. xii, 2, with *Katalog Schliemann Sammlg.*, 5842–44, and ibidem, 5848, with *Ephemeris*, 1898, pl. xii, 1, 5; *Athen. Mitth.*, 1886, pl. 1, 8. A mould for casting this type was found at Hissarlik itself, Dörpfeld, *Troja und Ilion*, 345. Typical of the Ægean at large is a short, flat triangular type, typologically "older" than the complicated examples with midrib and tang, but found in the same period as these (Seager, *Mochlos*, fig. 12, 44; Xanthoudides, loc. cit., pl. xxiv, 1193–4, xxix, 1169–71; xxxix, 1432–3; xliii, 1492–6; transitional types still copper, p. 66). Here, as in Egypt (Petrie, *Tools and Weapons*, pl. xxxiii No. 1), these simple flat blades are to be understood as products of regions which learned to produce and use metal, but were naturally at first less skilled in metallurgy than their teachers. The Ægean flat triangular daggers can thus not be adduced to prove that the Ægean is dependent on the Western Mediterranean (Spain: Dussaud, *Civil. Préhell.*, 86; Schuchhardt, *Alt Europa*, 195) for its knowledge of metal-working, because it is only those simplest local types which are somewhat similar in the Ægean and in Spain, while there are complicated types which are *contemporaneous* in the Ægean with the simpler local products. (See especially Xanthoudides, loc. cit., p. 73, and the evidence from Amorgos, *Ephem.*, 1898); and these contemporaneous complicated types are Anatolian. Therefore it is also impossible to derive

copper and silver, is actually found with all Early Cycladic deposits. Intercourse with Anatolia is on the other side attested by Bent's discovery, on the Carian coast, of tombs with marble "idols" of the developed Cycladic type.[1]

Second Early Cycladic Period.

As we have seen, this widely spread earliest stage of the island civilization soon disappeared; the excavations at Melos illustrate this point very well. A cemetery of the earliest period was found at Pelos,[2] and there are traces that it existed on the site of Phylakopi, before the first city was built.[3] This first city, however, belongs already to the stage when the communications converge in a few fixed centres, a period which we may call Early Cycladic II–III, though the older civilization, of course, persisted at the same time in backward regions and died out there gradually.[4] The second stage of Cycladic civilization is also well known from Syros, Siphnos and Naxos. And it is striking that now both the Asiatic and the European influences become more distinctly manifest. For now we get fully developed beak-spouted jugs and a black-polished fabric of indubitable Anatolian affinities[5]; now we also find the Danubian spiral decoration taking root on the islands and developing in its full bloom.[6] The influence of metal vessels remains noticeable: the typical foot of the developed Cycladic ware is exactly like that of the gold and silver vessels of Hissarlik.[7] Obviously, the regularization of the traffic and its favourable consequences had intensified intercourse not a little. Moreover, its centralization in a few emporia brought with it the result that foreign influences were much more consistently and permanently felt. Finally, we have to reckon with new arrivals from the "Hinterland" on either side, from Anatolia and from Europe, which were now connected via the islands; these new-comers would not, of course, spread all over a foreign archipelago which had nothing to offer in itself, but would remain in the quickly developing cities.

The islanders, even in this second stage of their civilization, did not follow slavishly foreign examples: the "frying pans" and the "sauce-boats"[8] are native

the Ægean silver rather from Spain than from Anatolia. Note also that the round butt-end of the Spanish (and Italian) daggers is unlike the more angular Ægean type. Compare also A. Remonchamps, *Griechische Dolch- und Schwertformen*, 4 sqq.; and p. 45 for a parallel case to that of our daggers: quite early in the history of the Greek swords a number of various type are evolved simultaneously.

[1] *Journ. Hell. Studies*, ix, 82.

[2] *Ann. Brit. School Arch. Athens*, iii, 35 sqq.

[3] *Excavations at Phylakopi*, 82; 239 sqq.

[4] See, for instance, the finds at Naxos (*Comptes Rendus Congrès Intern. Arch. Athènes*, 1905).

[5] Vide supra, p. 89 sq.

[6] Ibid., pp. 49, sqq.

[7] Dörpfeld, *Troja und Ilion*, 351, fig. 280, a, b.

[8] The history of the sauce-boat may well start in Anatolia, though we cannot quote direct Anatolian prototypes; but the *earliest* Cypriote ware, which is almost indistinguishable from South-West Anatolian fabrics in shapes and technique (vide supra, p. 78) contains a bowl with open side-spout (Gjerstad, *Studies on Prehistoric Cyprus*, p. 90, No. 4; *Corpus Vasorum Brit. Mus.*, fasc. ii, pl. ii, 1); then in the early examples, often in thick red-slip ware (vide supra, p. 89; p. 99, n. 2),

creations ; the black-polished ware has as much a character of its own as that which shows linear designs in red paint on a buff ground.[1] The spiral decoration is reformed beyond recognition in a scheme of stamped designs, and the " Urfirnis " technique is now fully developed.[2] But, nevertheless, we understand from the peculiar situation of the islands and from the conditions which determined their cultural developments that the second stage of their civilization shows even stronger similarities to

from the islands and from Crete (*Trans. Arch. Dept. Pennsylvania*, i, 215) the spout acquires a slope, and in the shape like *Ephemeris*, 1899, pl. ix, 8, it reaches the mainland (Blegen, *Korakou*, p. 7, fig. 6). Extreme shapes like *Ephemeris*, 1899, pl. ix, 1, may have arisen under influence of metal vessels, such as the gold sauceboat in the Louvre recently published by Mr. Childe (*Journ. Hell. Studies*, 1924, p. 163, sq.). As other clay vases, the sauceboat is on the islands parallelled by stone vessels (*Ephemeris*, 1899, col. 98, fig. 27 ; Seager, *Mochlos*, pl. vi, 3, 5, 12, and is, especially in its early shape, so common that the Ægean must be considered its homeland where the later shapes develop. Dr. Clon. Stephanos found in Naxos (*Congrès Arch. Athènes*, 1905, 221) three small sauce-boats, on stems with almost horizontal spouts (our Pl. V, 2) and one big one together, and holds that the first one is a triple lamp and the latter the oil-can. This seems the right view; the earlier shapes with the semicircular horizontal spout were mostly lamps, as is shown by the frequent blackening of the short spout, in which one would expect the wick to lie. Similar vessels may have served at first to keep the oil, but in course of time there was the usual differentiation according to function, and besides the lamp we find the actual *prochois* developed as an oil-can. The double-spouted gold can from Hissarlik II (*Katalog Schliemann Sammlg.*, 5863) always quoted in this connection is probably related to the triple-spouted one from Naxos. (Pl. V, 6.) Mr. Forsdyke's assumption of leather prototypes (*Catal. Vases Brit. Museum*, i, 1, 47), though perhaps suggested by an occasional late form, cannot be maintained when we consider the history of the type.

[1] This ware is, as Fimmen has already remarked (*Kret. Myk. Kultur*, 135), closely related to the similar Early Minoan II fabric of Eastern Crete (cf. Seager, *Mochlos*, 38, fig. 13, i, 6, with *Ephemeris*, 1899, pl. viii, x, which has the same peculiar shape, but another, if related, decoration). Its native and eclectic character is shown by the fact that shapes of originally different wares, such as calices (*Ephemeris*, 1899, pl. viii, 6, 18) and collar-necked vases which still continue, with pairs of vertical tubular handles (ibid. nos. 5, 7, 8) are made in it, while the designs sometimes continue those of the earliest incised ware (cf. *Ephemeris*, loc. cit., No. 7, with *Journ. Hell. Studies*, 1884, 55, fig. 11, *i.e. Brit. Museum Catal.*, A 309), and otherwise also appear in " patterned Urfirnis " ware (Athens Nat. Museum inv., 6108, 6109, like *Ephemeris*, loc. cit., No. 5).

[2] This is shown by the latest work at Phylakopi (*Ann. Brit. School*, xvii, p. 16) to belong to the earliest part of the First City. There are, moreover, quite a number of transitional forms between the red-polished thick-slip technique of Anatolia and the polished native " herring-bone ware Urfirnis " on the one hand, and pure " Urfirnis " ware on the other. Such transitional forms are, for instance, *Ephemeris*, 1898, pl. ix, 34 ; Nat. Museum Athens, 5138, with red " Urfirnis." The vessels from the Pelos necropolis in Melos also show various stages from polished slip ware to " Urfirnis " ware ; f. i. Nat. Museum Athens, inv., 6167, with mottled brown and red " Urfirnis." This example seems to confirm a general impression that the particular black-brown varnish of the " frying pans " and related vessels (such as Nat. Museum Athens, inv. 6167, with impressed concentric circles ; see also *Athen. Mitth.*, 1913, pl. vii) from Syros is a combination of two techniques, and in fact nothing but carboniferous " Urfirnis." The clay is mostly black and the high polish would be easily explicable if the vessels were smoked. These fabrics show in their decoration strong Danubian features, and the production of carboniferous fabrics being a Danubian characteristic, it is not strange to find it combined with the " Urfirnis " which had been developed on the islands when in Early Cycladic II the Danubian influences were strengthened.

foreign regions than the first, though the forces which radiated from Anatolia and which, as we have seen before, were of fundamental importance for the Ægean civilization, can be seen at work from the beginning.[1] In the succeeding period new influences from that quarter are added to the old, in contrast with those from Europe. For, as we have seen, the Danubian features on the islands are due to an immigration of Northerners. These, once settled, developed on their own, for the homeland was too far off to exercise any further influence. Just so the oldest Anatolian elements were absorbed, assimilated, and blended with those from Europe in the peculiar fabric of Cycladic civilization. But intercourse with Anatolia continued, and the contact was very direct. And so one may occasionally doubt whether similarities with Western Asia noticeable in the Second and Third Early Cycladic Period are due to recent importations and therefore foreign, or whether they belong to the original Anatolian element in cycladic civilization, and happen not to be known to us earlier, but should be called native. The last may be the case with certain bone tubes for holding colours, which appear on the islands, in Hissarlik II and at Bos Euyuk.[2] Recent importations, on the other hand, are remains of two-handled beakers,[3] and (though one would not like to dogmatize here) jugs of a more or less pronounced Anatolian appearance, which are found on Syros and Euboea.[4]

Crete.

The persistence and increase of foreign influences in the Second Early Cycladic Period contrasts the Cyclades with Crete. The greater island had been deeply affected, as we have seen, by the initial movement by which Anatolia stimulated the Ægean and started it on the way of evolution. But then its size, and the fact that it could accommodate and sustain a considerable inland population, and also its somewhat remote situation to the south, gave it an opportunity to develop on its own lines in perfect independence. The new civilization was well rooted in the country, and if the harbours, which kept up intercourse with more distant regions, occasionally imported foreign products, it could follow their suggestions and assimilate new ideas as far as they were congenial to its own peculiar nature. So grew up in Early Minoan Crete that astoundingly individual civilization which was soon to outshine all its rivals.

[1] Vide supra, p. 106.

[2] *Ephemeris*, 1899, pl. x, 2, 3 : cf. Schliemann, *Ilios*, 474, figs. 522–525 ; 532 : and also from Bos Euyuk, *Athen. Mitth.*, 1899, pl. iv, 6.

[3] Nat. Museum Athens, inv. 5245, like *Katalog Schliemann Sammlg.*, 1443.

[4] *Ephemeris*, 1899, pl. ix, 5, 7, 11 ; Papabasileios, loc. cit., pl. 9, top row. From Hissarlik : cf. *Katalog Schliemann Sammlg.*, 1198, but also possibly in earlier stages, as Nos. 662–712 suggest. On the other hand, the prototypes may be found in earlier Cycladic jugs (*Ephemeris*, 1898, pl. ix, 19, 20, 30 ; *Journ. Hell. Studies*, 1884, 55), and Rey (*Observations*, etc., pl. iv, 4) creates alternate possibilities for the origin of the carboniferous specimens, besides the Anatolian ones advocated by Childe, *Journ. Hell. Studies*, 1915, 204, and Kahrstedt, *Athen. Mitth.*, 1913, p. 182. Certainly Mr. Childe is right in seeing Trojan affinities in the Euboean finds ; especially typical is the flaring mouth of Papabasileios, loc. cit., pl. ix, 1, 6.

Hissarlik.

The Cyclades on the other hand, situated on the very route from Asia to the heart of Europe, and totally dependent on the traffic along that route because their soil would allow neither tillage nor cattle-keeping, developed prodigiously, but their civilization lacked reserve of energy, and the capacity to adapt itself if the conditions, which had favoured its development, should change. And changes are heralded already by those features in Cycladic civilization which point not to Asia Minor in general, but definitely to Hissarlik. That was not the case with the earliest Anatolian influences which made themselves felt in the Ægean. These seemed, on the contrary, to emanate from South-West Asia Minor.[1] On the Carian coast, again, were found traces of what is probably very early Ægean intercourse.[2] And in the Troad itself, stratigraphical evidence goes to prove that the mighty city of Hissarlik II did not follow immediately on the oldest Copper Age settlement.[3] But in enumerating the Anatolian features in the later phase of Cycladic civilization, we have continually referred to that Second City.

On the great road through the Morava valley we find at Gradac and at Vinça traces of what is, among Anatolian sites, peculiar to Hissarlik *alone*, namely the "face-urn"[4]; shortly afterwards copper is found for the first time, and, in fact, Anatolian types of weapons appear all over Central Europe.[5] It is obvious that the emporium at the Dardanelles becomes more and more the centre where traffic and intercourse of the two continents converge. And so the rise of Hissarlik spells doom for the Cyclades.

The Cycladic Expansion.

¶ 16. But with the decline of the Cycladic civilization we are not yet concerned. On the contrary, we have still to consider its bearers at the summit of their power, when the Greek mainland received the benefit of the New Age through their intermediacy.

The Mainland.

In mainland Greece, one finds no trace of direct intercourse with Anatolia. On the other hand, there is ample evidence of Cycladic influences; but it seems to take a considerable time before these can gain predominance to such an extent as to outweigh the differences between the mainland, island and Cretan civilizations.

[1] Vide supra, p. 99.

[2] The marble "idols" are almost useless for dating evidence, as very different types occur side by side: see *Athen. Mitth.*, 1891, 49: four found in one grave. See also *Comptes Rendus Congrès Int. d'Arch. Athènes*, 1905, 221; the highly developed sauce-boat of patterned "Urfirnis" (*Ann. Brit. School Athens*, xxii, pl. vii) is found together with an idol practically identical with the one which Bent obtained at Amorgos in the early necropolis (*Journ. Hell. Studies*, v, fig. 8). But what we may assert is that the very large or very elaborate types seem to be peculiar to the earliest period; and Bent found on the Carian coast at least one musician type like those from Keros and Thera (Bossert, *Alt Kreta*, figs. 16–20).

[3] Dörpfield, *Troja und Ilion*, 49.

[4] Vide supra, p. 36, n. 1.

[5] Vide infra, ¶ 20.

This was only to be expected, for the new forces had to overcome considerable resistance; in mainland Greece they found neither a blank (as they did in the Cyclades), nor a stagnant and inert native civilization, as in Late Neolithic Crete, but fresh and vigorous communities of northern immigrants who had only recently arrived. And so we find the "Urfirnis" pottery everywhere slowly gaining ground on the mainland fabrics of the Early Copper Age; in fact it is by that progress that we can follow how the established sub-neolithic civilizations gradually give way to the new influences from the East. But we not only know that these mainland civilizations used copper already (it is found everywhere with their remains[1]), but also that they stood in relation with the Cyclades *before* the "Urfirnis" actually prevailed,[2] and that it is therefore highly probable that they got their metal as well as their obsidian from the Cyclades.[3] When the results of the work at Corinth and Tiryns are published we shall probably be able to see how, in the struggle for predominance, the "Urfirnis" was temporarily even subjected to the old native tendencies of the patterned and the carboniferous wares, so that curious transitional forms were created.[4] In Corinthia, *e.g.* at Korakou, it succeeds the highly polished Danubian wares of the different classes also known in Phocis and Boeotia, and of a special variety which occasionally shows the Danubian belts of running spirals[5]; at Gonia, the isolated station where Tripolje people held their own, the "Urfirnis" was found to have existed for a certain time alongside with the trichrome fabric which also precedes it.[6] In Boeotia and Phocis it succeeds the mixed civilization, which is archæologically

[1] Vide supra, p. 44.

[2] Particularly convincing are the triangular daggers, typically Ægean, found by M. Sotiriades in the native Danubian layers, almost on bed-rock, at Hagia Marina (*Revue des Etudes Grecques*, 1912, p. 276, fig. 15). The evidence from Vinça (vide supra, p. 46) may prove that the Danubians were not in possession of copper before their migration; the metal appears there just after the "face-urn" has taken root. Prof. Vassits, however, takes the 3 M at the bottom of the mound as one more or less homogeneous stratum, which on the strength of the occurrence of the "face-urn" he dates after the beginning of Hissarlik II. That would imply that Vinça only became inhabited on a considerable scale when the trade from the Troad up the Morava valley had given importance to the site. I would only endorse this view, instead of the one here propounded, if Prof. Vassit's statement, that the face-urn occurs from M 8, 2 onwards, means that it occurs there regularly, while yet it is already occasionally found lower down. The occurrence of a copper *bead* in the deepest layer may well be a sign that the actual copper-age has *not* yet started. (See for parallels, p. 5; p. 34, n. 6.)

[3] On obsidian, see Appendix II.

[4] Only Dr. Blegen's class A II (*Korakou*, p. 5) is as yet published, which with its slip continues the earlier tradition, though its shapes already show the fully developed sauce-boat. Most interesting other hybrid wares will be seen in the forthcoming publication of Mrs. L. A. Walker-Kosmopoulos.

[5] Blegen, *Korakou*, pp. 4, 111. Vide supra, p. 48. Dr. Blegen rightly remarks that its spirals seem earlier than those known from the islands, and I would therefore rather not explain them in the way the copper daggers from Hagia Marina are explained (see n. 2 above), but as due to Danubian elements brought across the Corinthian Gulf by the great migration.

[6] *Ann. Brit. School Athens*, xxii, 188.

marked by the combined occurrence of polychrome B wares and carboniferous Danubian fabrics.[1] At Korakou (class C II) and at Orchomenos, more completely even at Hagia Marina, the new technique is complicated by the addition of white designs on the top of "Urfirnis," which, though they are peculiarly developed at Hagia Marina, afford at all three sites clear evidence of being based on the white-painted, polished-black Danubian ware which precedes it.[2]

Obviously the "Urfirnis" was produced in these different regions according to the traditions of the potters who took to its manufacture.[3] The displacement of the older wares was apparently peaceful,[4] though evidently not gradual. One fundamental difference is nevertheless noticeable; if we have sometimes called the First Early Helladic period sub-neolithic, it was because its settlements appeared to be self-contained, rural, not depending on trade, prolonging herein an economic state of affairs which is peculiar to Neolithic times. In the Early Helladic period, however, there are also new settlements founded. Those in Argolis, for instance (though traces of earlier life in the plain are not lacking) go back to this age.[5] These new settlements all start off with "Urfirnis," just as those others, like Lianokhladi,[6] where "Urfirnis" appears suddenly and in bulk, suggesting fresh inhabitation after desertion. And all these sites are situated on important highways, and were founded by people with commercial insight and aims. This has been made particularly clear by the researches of Dr. Blegen and Mr. W. A. Heurtley, who stressed the importance of the great trade route "leading from the Argolis and thence across the Corinthian Gulf to Thisbe, whence it proceeded overland to Thebes and Orchomenos."[7] The latter site's wealth in Early and Middle Helladic times is clearly dependent on trade. There the route just discussed is joined by that from North-West Anatolia via

[1] Vide supra, pp. 42 sqq.

[2] See for its distribution, Fimmen, *Kret.-Myk. Kultur*, 75 sq. There is no similarity with Early Minoan III wares, either in design, or shape, or quality of paint medium.

[3] Wace and Thompson, *Prehistoric Thessaly*, p. 245. The mere fact that the change of pottery is sudden is, in the absence of traces of fire or other signs of devastation, not sufficient to justify the suggestion of war and conquest, as Wace and Thompson (loc. cit., 244 sq.) think. Moreover, there is not really a break, except, perhaps, at Lianokladhi, which is deserted. At Chaeronea, Drachmani, Orchomenos, and Hagia Marina the purely native civilization is displaced by one containing strong Danubian elements. Subsequently there is a more or less sudden appearance of Urfirnis; on which see below, p. 113, n. 2.

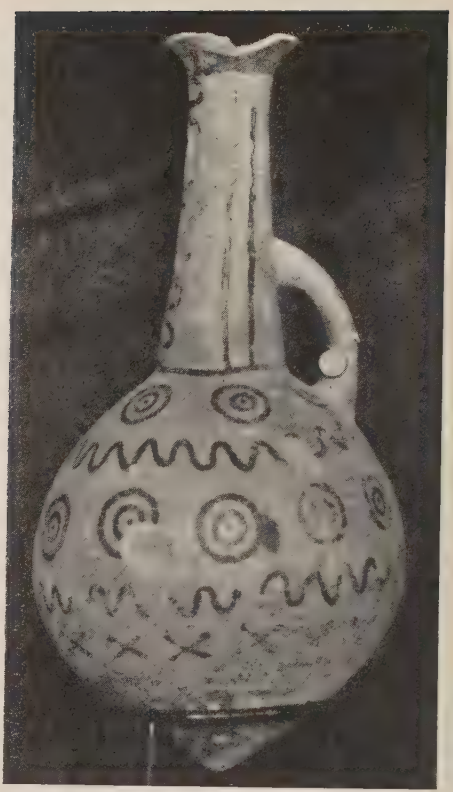
[4] Bulle, *Orchomenos*, i, p. 25; *Revue des Etudes Grecques*, 1912, 279.

[5] At Tiryns and Mycenæ, Urfirnis is the earliest ware found even on bed-rock; but see traces of an earlier age mentioned above, p. 11, n. 7; p. 48.

[6] Wace and Thompson, *Prehistoric Thessaly*, p. 177.

[7] *American Journ. of Arch.*, 1920, 8. Annual British School at Athens, XXVI, 38 sqq. I have to differ from Mr. Heurtley's view on the character of the Early Helladic period. Notice also the distribution of Cycladic idols along the road, though they are rare on the mainland; one comes from Delphi, easily reached from Corinthia; another one is found near Orchomenos (Bulle, loc. cit., 121, fig. 33); while at Zygouries, on the route from Corinth to the Argolis, Dr. Blegen found a clay imitation (Blegen, *Korakou*, 112, n. 2).

1



2

3

4

ASIATIC POTTERY. Scale about 1 : 3.

1. From Tell Acharat; 2. From Cyprus; 3. From Smyrna; 4. From Kafer Djerra.

Chalkis. And the fact that on the sites newly inhabited in this period "Urfirnis" is the earliest ware shows whence came the people who brought this fresh insight, into a matter not cared for by the mainland population, which had continued on the same lines as the "neolithicum." Because the "Urfirnis" develops on the islands and has no antecedents in mainland Greece, and because it appears there fully developed with Cycladic or even Anatolian shapes, such as the beak-spouted jug, the sauce-boat and the collar-necked vase with the domed cover,[1] therefore the new commercial aims must have been adopted by the island inhabitants, people flourishing by a precarious trade, entrenched on barren rocks which afforded no room for the new generations, who were thus compelled to emigrate in search of new lands, and naturally did so along the roads opened by their trade. Their settlement on the mainland principally follows the routes indicated by Dr. Blegen, of which Lianokladhi is the northernmost point.[2] We shall soon have to follow their branching off westwards from Corinthia, where they had a very strong centre.[3] A good deal of the trade of these Cycladic "invaders" of the mainland must have been directed to obtaining the foodstuff which the barren islands could not produce, and for which they could offer articles of the Cycladic craftsmen in exchange. Some of these will have been of perishable material, but there will have been amongst them the copper tools and weapons (at first very few), and the Cycladic marble "idols" which are found here and there amongst Early Helladic remains.

If we find thus in "Urfirnis" the hall mark of our Cycladic traders, and if we remember that this pottery is sprung from the same Anatolian root as Cretan Vassiliki ware,[4] then we ask naturally whether for the islands and mainland of

[1] See the examples quoted above pp. 86 sq. with notes, where we discussed the general dependence of Ægean ceramics on Anatolia; as additional features for the close contact between the Argolis and the Ægean, we may adduce some small beak-spouted jugs from Tiryns, very much, indeed, like those from Mochlos (Seager, *Mochlos*, fig. 71*b*; II n.). In the same museum, also from Tiryns, and perhaps from Mycenæ, are imitations of the dark-on-polished buff Cycladic ware (Nauplia Museum, inv. 73, 1266; Photo Deutsch. Arch. Inst., 15, 628).

[2] The sudden appearance of the Urfirnis is thus well explained. It is not dependent on the settlement of uprooted migrating people *en marche*. It is due to the founding of colonies by comparatively civilized traders, who knew where they were going before they started, settled together, and soon prevailed over the older inhabitants. They did not need to upset what they found; there was room for them amongst the agricultural communities, but their higher and more differentiated civilization would, naturally, gain predominance quickly wherever they came to live. It was only in later times, when trade was universal, that, because competition became keen, brute force played some part in an expansion and a penetration in aim purely commercial. The settlement at Lianokladhi is interesting. This site was apparently deserted when the Danubians had displaced the centre of gravity to the south, in the Kephissos plain. But as soon as trade became a dominant factor in the mainland civilization, the important station at the Spercheus was inhabited again.

[3] There were not less than eleven sites inhabited in the Early Helladic Period, of which only two show Neolithic remains (*Amer. Journ. Arch.*, 1920, 8).

[4] *Vide supra*, ¶ 13.

Greece we can, in philology, find as striking a confirmation of our views as we got for Crete. And indeed the complete agreement exists again. For just as we find the related pot fabrics derived from Anatolian antecedents, so we find in Crete, on the Cyclades, and in Greece, exactly the same type of Asiatic names surviving.[1] Can it be accidental that all along the trade route to the north we find the Asiatic names Tiryns, Mycenæ, Corinth, Thisbe, where, notwithstanding the occurrence of earlier remains, the first important period is marked by Urfirnis, while, very significantly indeed, similar names are *not* found in Eastern Phocis or Northern Boeotia near Lake Kopais,[2] where we know that the Danubians were particularly strong, and continued an independent existence till the Copper Age was well advanced, *i.e.* while "Urfirnis" people prevailed already elsewhere.[3]

Crete. On the other hand, the Cycladic traders seem to have reached Crete both in their earlier and later period. At Pyrgos, north-east of Knossos, on a headland was found a sepulchral cave containing hundreds of interments, and here we find bottles of plain "herring-bone" ware, of a narrow-necked type somewhat rare on the islands.[4] In fact, it is probable that the enigmatic incised fabric of the First Early Minoan Period (the "sub-neolithicum" in Central Crete), with its very close pattern and its undecorated vertical collar is somehow related to the "herring-bone" ware, if only as a Cretan adaptation of a Cycladic style.[5] The bottles of Pyrgos, however, definitely belong to the Cycladic "herring-bone" pottery, and even the clay has the same red very gritty substance as that used in the Cyclades. Other Early Cycladic features among the contents of the cave are the pyxides tapering towards the top,[6] and provided with vertical tubular suspension handles (as the bottles have too), and two early sauce-boats in thick red-slip ware.[7] At the same time the long-used ossuary contains incised wares of the type known from the beginning of the First City at Phylakopi.[8] Beak-spouted jugs of an already existing form, and the extensive use of burnish decoration, show that we have here plainly

[1] Fick, *Vorgriechische Ortsnamen*, 56 sqq. and *passim*.

[2] Ibid., loc. cit., 79 sqq., 128.

[3] On this last point, *vide supra*, p. 111.

[4] Evans, *Palace of Minos*, i, fig. 19*c*; cf. *Journ. Hell. Studies*, v, p. 55, fig. 11: *Athen. Mitth.*, 1886, p. 19 (tomb B), and Nat. Museum, Athens, 6112, from Naxos (*Comptes Rendus Congrès Ind. d'Arch. Athènes*, 1905, p. 211).

[5] Evans, *Palace of Minos*, i, figs, 21–22; *vide supra*, p. 96. Here, as in the case of the spiral, we find the ornament used by potters and lapidaries alike: see the background on the cover with the dog-handle, Seager, *Mochlos*, p. 21, fig. 5, which the discoverer had already referred to the "Subneolithic wares." On the other hand, those same designs influence the earliest dark-on-light ware (e.g. *Ann. Brit. School, Athens*, vii, 144, fig. 52, middle top row).

[6] *Vide supra*, p. 49, n. 1.

[7] Candia Museum, inv. 7521, 7523.

[8] Evans, *Palace of Minos*, i, 114, fig. 82, cf. *Phylakopi*, pl. iv, 1–4.

a mixture of native and Cycladic tendencies.[1] Amongst the finds from Pyrgos are a certain number of two-handled tankards of a shape closely related to one common in the "Urfirnis" ware of the mainland.[2] At Pyrgos these show either a burnish decoration or one painted with matt red on a thin white body paint. This shape is not, to my knowledge, found in Anatolia or on the islands. On the mainland it is found all through the Danubian region, and it might have antecedents which would then be related to some very primitive black carboniferous wares found by M. Rey in Macedonia.[3] In Crete the type is not adopted outside Pyrgos. One isolated specimen, almost transformed into a bottle, is found at Mochlos.[4] Thus one feels inclined to ascribe its limited appearance on the greater island to influences deriving ultimately from the Greek mainland, where the type is early and persists long. From the same quarter some knowledge of a particular paint technique, which is common at Pyrgos, may have reached Crete.[5] Whether the islands again played the part of intermediaries we do not know, for a link in the history of this vase-type is missing. The same uncertainty exists as to the origin of a few askoid vessels found in Crete.[6]

It is interesting to note the range of time of the Cycladic (or Cycladizing) finds at Pyrgos. It shows that some harbours on the north coast kept up relations with the islands for some considerable time, just as Komò or other ports of the Mesarà remained in touch with Egypt from the 1st Dynasty onwards, while in the eastern sites the Asiatic traffic seems concentrated.[7]

[1] It seems hardly necessary to stress the fact that we may call *these* beak-spouted jugs and *this* burnish decoration *native*, since both appear in a stage of development entirely peculiar to Crete; the possibility that their origin may be ultimately found outside the island we have discussed before, and that point does not concern us here, where we are tracing Cycladic features as they appear in a Cretan context, which itself is again built up out of different constituents.

[2] *E.g.* Blegen, *Korakou*, figs. 10, 11, pl. 1, 2.

[3] Rey, *Observations*, etc., pl. iv. The shape occurs further at Lengyel (Wosinsky, loc. cit., pl. vi, 3), and in Bosnia in various not well-dated layers; *Wiss. Mitth. aus Bosnie-Hercegowina*, 1893, pl. xx; 1897, pl. lii, 5; and *Glasnik Zemalskog, Muzeja*, vi, pl. vi, 13.

[4] Seager, *Mochlos*, fig. 46, xxi, 5.

[5] *Vide supra*, p. 92.

[6] *Mem. R. Inst. Lomb.*, xxi, pl. xii (Hag. Trudi), Xanthoudides, *Vaulted Tombs of Mesarà*, pl. xxix, 4152.

[7] I here refer not so much to the primary and fundamental contact with South-West Anatolia, the results of which differentiated the Minoan from the Neolithic development, though these also were most directly and consistently felt by the eastern part of the island, as we have seen (vide supra, p. 94). More conclusive proof of the permanency of the concentration of Asiatic intercourse in the eastern harbours appears from the fact that such exceptional features as point to more distant Asiatic regions are found there exclusively. They are the appearance of exceptional painted ware of Syrian affinities (*Vide infra*, p. 122), and, for instance, of a mother-goddess statuette which holds its breasts (Seager, *Mochlos*, figs. 32, 33), a purely Asiatic, non-Cretan, non-Egyptian hieratic position. The Late Minoan bronze statuette, de Ridder, *Les bronzes Antiques du Louvre*, i, pl. 10, No. 80, which shows a similar, if by no means an identical, gesture is also exceptional in Cretan plastic (as Dr. Bossert, *Alt Kreta*,[2] No. 140, remarks) because the feet are shown. In contrast with the vessel referred to above (which had a foreign oily paint), the Mochlos figurine is certainly of Cretan make, but of Asiatic inspiration. Compare also the figures on the very Late Mycenæan vase (Brit. Museum Cat. A, 950), from Ialysos, where one would expect Asiatic features.

Spiral in Crete.

The result of the leading position of Eastern Crete in the Early Minoan Age, however, was apparently that a good deal of the traffic with the Cyclades came to those ports; this is not so much shown by the occurrence of obsidian and marble "idols" all through the island[1]—that might be due to inland trade—but by the appearance of the spiral decoration at Gournia, Vassiliki, and at Mochlos. There can be no doubt that it reached Crete ultimately from the Danubian region for the earliest spiraliform designs are essentially belts of running spirals. And it is therefore highly probable that the Cyclades, where the Danubian spiral designs flourished,[2] were again the intermediaries. It is, however, not likely that the appearance of the new decorative scheme goes back to the importation of Cycladic pottery, for the Cycladic and the Cretan vessels with spiral designs are two very peculiar but thoroughly different groups. More costly objects will have been the medium; in fact, there appear at Platanos stone vases with spirals in relief[3] which, as their discoverer notes, cannot be separated from the well-known stone pyxides from Melos and Amorgos, on the one hand,[4] and from certain Butmir pots on the other.[5] But running spirals in relief cannot but be secondary in stone work; they essentially belong to some technique where applied thread or wire is used.[6] And from the Mesarà come some small objects in such a technique which may act as representatives of larger ones which are naturally lost; there are small gold beads with spirals of applied gold wire.[7] Now it is worth noting that the vessels with the earliest spiraliform designs in Eastern Crete often show little loops or knobs on the neck, which are inexplicable unless they had metal prototypes.[8]

Whatever the actual medium was which introduced the spiral into Crete—we have seen that we must also reckon with embroidery and body-painting besides gold- and stone-work[9]—its origin is unmistakably the Danubian region. For there only is

[1] Xanthoudides, *The Vaulted Tombs of Masarà*, pl. xxi, Nos. 122–127. Evans, *Cretan Pictographs*, p. 125–8. Αρχ. Δελτίον, 1918, col. 163, fig. 14. Some of these are of limestone, and may be native work; those of island marble are, of course, importations.

[2] *Vide supra*, p. 49 sqq.

[3] Xanthoudides, loc. cit., pl. xi, No. 1904a, and p. 102.

[4] Bossert, *Alt Kreta*, fig. 32–34.

[5] Radimsky, etc., *Butmir*, ii, pl. viii, 5.

[6] *Vide supra*, p. 27, note 1.

[7] Xanthoudides, loc. cit., pl. xv, and pl. vii, Nos. 454, 455 and especially pl. viii, 391. At Hissarlik applied spirals of gold thread occur in the "treasure of Priam," which is slightly later than our period, but significantly enough there never appears a running spiral design, but only the S spiral and its varieties; in short, those which naturally arise when a short bit of wire is bent over; these appear also in needles in the islands, and extend over a long course of time. (*Ephemeris*, 1898, pl. x, 15–16); and in the ear spirals (Schmidt, *Zeitschr. f. Ethnol.*, 1904, p. 615 sqq., fig. 7–20).

[8] *Transact. Dept. of Arch. Pennsylv.*, ii, p. 129, fig. 13 (not clear in drawing, i.e. *Candia Museum*, 5249. Also *Candia Museum*, 5250; cf. *Gournia*, pl. xii, No. 24).

[9] In Crete it appears also on other objects besides vessels, *e.g.* seals, Xanthoudides, loc. cit., pl. iv., 516, 517; xiii, 1044, 1045, 1029.

the belt of running spirals at home,[1] and it is this peculiar form of spiral decoration which appears earliest in Crete,[2] a fact which is the more significant as this form is given up in the immediately succeeding period, and even occasionally in the very first stage of its acclimatization in Crete; no doubt because the exuberance of the Cretan artist found no adequate means of expression in a motif which claims exclusive dominion on the surface on which it appears and has a primordial rhythmic beauty.[3] The spiral belt in Crete is dissolved either into subordinate rows of little "quirks,"[4] or in "Streuspiralen," small loose spirals[5] forming but one of the many motifs which, with equal values, form the rich tapestry that covers the Middle Minoan vessels.

An additional proof of the Danubian origin of the earliest spirals in Crete is the occurrence in the Early Minoan Period, and, *e.g.* at Butmir, of special complications of the running spiral design[6]; these suggest the common possession of quite an

[1] *Vide supra*, ¶5: to the intercourse which, as we see at Pyrgos, existed already in the Earliest Cycladic Period, may be due the very earliest and isolated occurrence of the spiral in Crete, on the inside of a burnish-decorated calix from Arkalokhori (*Ann. Brit. School Athens*, xix, 38, fig. 5b).

[2] *Transactions*, loc. cit., i, pl. xxvii, 17-24; on the derivates, see following notes.

[3] This rhythmic linear value acquired as it were substantiality in the Danubian region, and even in the Cyclades, because the spiral decoration was either "Bandkeramik" (*i.e.* the spiraliform designs, whether painted or incised, had a certain width) or was applied in relief. The Cretan pot-painter, who did not use ribbon-like designs, executed running spirals in painted lines, and consequently he incurred hideous bare spaces between each pair of successive coils, spaces only crossed by a meagre connecting line; he consequently multiplied that line in bundles which cover the surface between two successive coils, thus introducing an element which has nothing to do with spiral decoration as such (*Transactions*, etc., i, pl. xxxi, 13; xxvii, 19–24; xxix, 1, 2; xxx, 10. *American Journ. of Arch.*, 1909, p. 283, fig. 6; 284, fig. 8; Seager, *Mochlos*, fig. 18, v, *a*). In the last two specimens the connecting line is not multiplied, but broadened. The evidence of all these instances is so clear that there can be no doubt as to the baselessness of Gotsmich's "explanation" of the last two examples from metal prototypes, for which he adduces small ear-pendants which have nothing to do with spiral belts; see *Zeitsch. f. Ethnol.*, 1904, pp. 615 sqq., figs. 7–20, and *supra*, p. 116, n. 7. The assumption is, moreover, based on the last-named examples only, one of which (*American Journ. Arch.*, 1909, 283, fig. 6) is even misunderstood, and notwithstanding its obviously degraded character, is made a starting-point for the development of the spiral belt in Crete. As soon as the connecting line of the successive spiral coils is multiplied, the coils themselves are changed and decomposed into various designs (*Transactions*, loc. cit., pl. xxvii, figs. 20–24; pl. xxix, 1–8, 12; xxxiii, 1). Thus the pure spiral decoration disintegrates practically as soon as it is adopted by the Cretans. See also the following notes. Our study of early interrelations of the Near Eastern cultures is, of course, not primarily concerned with the development of Cretan vase painting, and this and the succeeding notes aim in no way at completeness.

[4] *Trans. Dept. Arch. Univ. Pennsyl.*, vol. i, pl. xxvii, 15, 16; xxviii, 20; xxx, 14–16. See ibid., p. 201. Evans, *Palace of Minos*, fig. 134, *e*.

[5] E.g. *Transactions*, loc. cit., i, pl. xxix, 12; Evans, *Palace of Minos*, fig. 134, fig. 136 *g*.

[6] Cf., Evans, *Palace of Minos*, I, 110, fig. 77, and the Mochlos seal (ibid., fig. 64), with Radimsky, loc. cit., i, pl. ii, p; on the date of the seal see below, p. 123, n. 2. One wonders whether a jug with a meander (Seager, *Mochlos*, fig. 31; now dark, but originally white on black) is a local simplification of the spiral in a direction which one would not expect in Crete, or directly connected with Europe. The shape with its high handle is rather mainland than Cretan.

extensive decorative art, which is entirely lost to us except in a few cases where it is reflected in the material with which archæology is compelled to deal almost exclusively, because that material alone is of an imperishable nature. It seems likely, however, that this Danubian decorative art reached Crete in the form it had assumed in the Cyclades, where the spiral decoration is known to have existed already in the First Early Cycladic Period,[1] and this view is, indeed, generally held.[2]

Just because it is improbable that the spiral decoration reached Crete on painted vessels, there is no necessity to derive the ceramic technique in which it first appears (*i.e.* in yellowish-white paint on an "Urfirnis" body) from the north. On the Cyclades no trace of it is found; the Danubian white-painted wares are essentially different in technique (polished carboniferous wares) and use, moreover, a dead-white chalky paint, while the earliest Cretan paint is yellowish, and adheres much better. In Crete the painting technique arises in a period of experiments, and it only gains the upper hand over the earlier attempts in the same direction (incised and dark-on-light "rational" designs as opposed to mottling) because of its inherent decorative superiority.[3] The shapes of the vessels on which the new technique is applied are thoroughly native, and so are the designs themselves, which consist for the most part either of the hatched triangles known from the dark-on-light ware, and partly of "garlands" prevailing both there and in the incised mottled ware from Vassiliki and Mochlos; the spiral belts appear only in exceptional cases. Against all these arguments one can only adduce the exceptional tankard from Mochlos[4] as a possible proof of mainland influence in Crete, independent of the Cyclades, and the available evidence thus tends to confirm the view that experimenting, which we know was their practice then, led the Cretan potters to the invention of the new technique.[5]

On the islands it occurs only once to my knowledge, and then it is not "Weissmalerei," but polychromy; a curious vessel from Naxos has garlands of red bordered by white, the very design which opens the period of polychromy in Crete on the

[1] *Vide supra*, p. 50, n. 1.

[2] Evans, loc. cit. 114. The "vast Neolithic province" has, of course, to be replaced by "Danubian region."

[3] *Vide supra*, pp. 92 sqq.

[4] Seager, *Mochlos*, fig. 46, xxi, 5.

[5] The only alternative would be to assume influence from ware like that from Hagia Marina and from class C ii (cf. *Korakou*), which shows white designs (of a less yellow white) on Urfirnis, and go back in their turn to the Danubian white-painted, polished, carboniferous wares which preceded them in the country. But one would then have to postulate a place of manufacture for this ware on the mainland which is not yet known to us, for at the sites mentioned we find neither in shapes nor in designs anything which justifies us in claiming them as ancestors of the Cretan fabric. Hub. Schmidt's derivation of the Cretan vase-painting from a postulated Central European "weissmalerei" (*Zeitsch. f. Ethnol.*, 1904, p. 637 sqq.) is based on uncritical views of the various fabrics concerned. See also above, p. 17, n. 3.

border of Early Minoan III and Middle Minoan I,[1] the lower limit of the period with which we are at present concerned. But before turning to the latter period we shall once more sum up the synchronisms obtained in our analysis and incorporate with our fresh results those reached in the first part of these "Studies."

Synchronisms.

¶ 17. We have found that the Copper Age is no mere abstraction convenient for science which has to fix certain points in the unbroken course of the development of early civilization. On the contrary, the invention of metallurgy appears to be a most momentous event, which gave a sudden impetus to that development and brings it within the sphere of our knowledge. Its spread from one centre explains the rough synchronism of the first appearance of metal in the regions round the Eastern Mediterranean: Hissarlik I, Yortan, the Late Predynastic Period in Egypt (from Sequence Date 60 onward),[2] and slightly afterwards Cyprus, Crete (Early Minoan I in the east, and the so-called "sub-neolithicum" in the centre), and the Cyclades. It is South-Western Asia Minor from which the movement seems to radiate; Hissarlik II is perhaps not founded within the limits of this period at all. On the Greek mainland immigrants from the Black Earth Region settle between Larissa and the Pagasean Gulf (Thessaly B Period) and at Gonia on the Isthmus; others from the Danubian region, arriving perhaps slightly later, also penetrate into Corinthia where they mix, as in Phocis and Boeotia, with the native population (Orchomenos I, etc.). They are in possession of the spiral decorations (Amorgos stone-pyxis and hæmatite seal), but it depends on local and, perhaps, sociological factors (men's and women's craft) whether the spiral appears at all on the pot decoration or at what date. The economic situation on the mainland remains practically unchanged; the settlements live on the surrounding country, not on trade. Trade, however, makes it possible that the Cyclades, those stepping-stones between two continents, are populated to a degree never reached before or after, and Danubians with their spiral designs mix with Anatolians bringing metal. This we may call the First Early Ægean Period.

First Early Ægean Period.

We must not underrate its extent in time; the simpler a civilization the more difficult it is to introduce any change, and the first changes will take longest to be effected. Even within this first period there seems to have been time for the Earliest Cycladic civilization to develop its "herring-bone" ware, and to influence Cretan ceramics with it, so as to give rise to the fine grey Sub-neolithic incised fabric. This same period saw the diffusion of theriomorphic and multiple vases and colour-palettes from Asia and all the incipient intercourse of which we found traces in Egypt and elsewhere, while the Egyptian stone vases were reaching Crete. At the same time

[1] The Naxos vessel, *Comptes Rend. Congr. Int. Arch.*, 1905, p. 222. See further Evans, *Palace of Minos*, i, p. 111, with fig. 77; Cretan pictographs, 115, fig. 105. Xanthoudides, loc. cit., pl. vi, Nos. 50, 54.

[2] *Vide supra*, p. 102.

Sumerians or "Sumerianized" Asiatics sail through the straits of Bab el-Mandeb and through the Wadi Hammamat come in contact with the Late Predynastic civilization, eventually perhaps actually entering the country in restricted numbers.[1] The North Syrian Civilization which used polychrome pottery and extended via Assur to Susa II[2] must have existed in this period, because Dr. Andrae found its remains in Assur to antedate the appearance there of the early Sumerians.[3] As the advance of the latter northwards may have taken some time, and their first remains at Assur are like the oldest layers at Telloh and like Fara, we may assume that they came to Assur towards the end of what was in the West the First Early Ægean Period; and the North Syrian civilization with its polychrome ware need therefore not *antedate* that period. But Susa I does[4]; and as it has copper it would seem as if the knowledge of copper-working spread to Western Asia from a centre further east, so that it reached the Western Mediterranean later than South-Western Persia. We shall soon be able to locate that centre more definitely.

This period has as a whole a definite character; it is the first of the great crises which succeed each other at more or less regular intervals of five to seven centuries; crises in which large movements of people, prompted by forces which nearly always elude the possibility of even hypothetical explanations, change fundamentally the existing conditions. At the same time our first period, includes the adaptation of the gradually settling populations to their new surroundings, the amalgamation in each region of immemorial native elements with those introduced by the recent upheavals, and we see those conditions taking shape which are to determine the course of events in the succeeding centuries.

The Second Early Ægean Period.

The Second Ægean Period includes this subsequent development under stable conditions. In Crete it embraces the Second and Third Minoan Period and the remains, though containing various traces which enable us to recognize their foreign origin, are decidedly and typically Cretan; in them it is not those reminiscences of an early stage with foreign affinities which prevail, but the peculiarly Cretan features. The finds from the Mesarà allow us to synchronize the beginning of this Second Period with the Ist Egyptian Dynasty, *i.e.* with the establishment of a unified kingdom in the Nile Valley by Narmer–Menes (*c.* 3200 B.C.)[5]; for the Egyptian features in Dr. Xanthoudides' *tholoi* are probably to be explained by the arrival of emigrants from the Western Delta state, the submission of which was the final act which accomplished the unification[6]; as we have seen, the emigrants appear in the Second Early Minoan Period, and affect lastingly only certain aspects of Cretan "high-life." The

[1] Frankfort, "Studies," I, pp. 136 sqq.

[2] Ibid., pp. 69 sqq.

[3] Ibid., pp. 62, 84, sqq.

[4] Ibid., p. 86 (cf. pp. 43 sqq., 85).

[5] See Ed. Meyer, *Gesch. des Altertums*, Nachtrag 1926, pp. 40 sqq. An uncertainty of one to two centuries remains for all dates before 2000 B.C.

[6] Frankfort, "Studies," I, p. 116.

eastern harbours maintain contact with Asia; they also deal with the Cyclades, to which, moreover, ships from the harbours on the north coast (Pyrgos) ply.

In the Cyclades the stabilization becomes manifest by a confinement of the traffic to fixed channels and a consequent decay of the wealth of the minor islands, while on those which could hold their own for a time—Syros, Siphnos, Naxos, Melos—foreign influence from both sides asserts itself rather more strongly than in the beginning, though the Cycladic civilization maintains throughout its own individuality; Phylakopi is founded—the remains of the First Period of its first (unfortified) city are similar to those of the later stages on the other islands. The restriction imposed by the new circumstances on the Cycladic civilization furthers its extension to the mainland, which it penetrates along the important trade routes (Argolis–Corinthia–Boeotia, Chalkis–Boeotia-Phocis), and "Urfirnis" ware marks its advance; Tiryns, perhaps Mycenæ, are founded; nine fresh sites in Corinthia are inhabited. For a time the new commercial civilization exists alongside the agricultural one (Gonia), till its superiority gains a decisive predominance. (Orchomenos II; Hagia Marina II; Lianokladhi II). But Hissarlik II attacts more and more the traffic from Anatolia into Central Europe through the river valleys (face urns along the Morava and on the Danube), and seems to absorb the connections which ran in former days from South-Western Asia Minor to the islands (Trojan vessels in Syros and Euboea).

In Crete the relations with Egypt are reinforced towards the end of Early Minoan II; they had become less lively under the Thinite dynasties (I and II) than they had been in the Late Predynastic Age, presumably because they had centred in the Libyan Western Delta state, which long resisted the unifying tendencies of the Hierakonpolite ruler Narmer-Menes and his predecessor "Scorpion"; the collapse of the resistance and the emigration of those enemies from the wrath of the now victorious Southerners naturally brought about a break in the connections with Crete, such as Sir Arthur Evans noted on the strength of his finds.[1] But the natural conditions restored themselves by the force of sheer necessity; just as the cultural superiority and greater importance of the Delta had to be recognized in course of time and the capital shifted from Thinis in Upper Egypt to Memphis, so the relations with Crete are re-established from the IVth Dynasty onwards, as imported vessels and their Cretan imitations show, amongst which clear IVth and VIth Dynasty shapes appear.[2]

From Crete also comes evidence showing that the Ægean was affected by the next great upheaval which changed so deeply the aspect of the Near East; a movement which started far in the north-east, first brought the Gutium down on Sumer and Akkad, and then found a second centre in North Syria, whence it radiated, thrusting

[1] Evans, *Palace of Minos*, i, p. 66.
[2] Ibid., figs. 54, 55, 60.

the Amorites into Mesopotamia, while, on the other hand, Syrians penetrated into the Nile valley as early as the reign of Pepi II, and, in the confusion which followed the collapse of the Old Kingdom, for a short period even prevailed as the VIIIth Dynasty.[1]

If Cretan glyptic of the Third Early Minoan Period shows resemblances to that of contemporary Egypt, that seems not to be due to an Egypto-Libyan element which would affect Crete, as Sir Arthur Evans holds, but to a Syrian element which affected both Egypt and Crete alike. This is proved as I have shown elsewhere by the fact that the new features in Cretan and Egyptian glyptic are not identical, but can be easily understood as pointing back to a common Syrian source.[2] Cretan glyptic, in fact, comes practically into being in this period,[3] and the predominance of *ivory* seals confirms the evidence of foreign influence suggested by shapes and designs.

Moreover, some independent evidence comes from Crete as well; at Mochlos a curious saucer is found which has no parallel amongst the common Cretan dark ware; its designs, on a polished buff ground, are not executed in the ordinary Cretan matt or half matt paint medium, but in a thick, reddish, oily paint, which stands out almost in relief on the vase-surface[4]; it is indistinguishable from some of the very early Syrian wares, which we discussed above,[5] and which in this same period appear in Cyprus.[6] In fact, a certain Cypriote bottle of this intrusive ware[7] at Nicosia (Pl. VII, 2), is in all points of technique like the Cretan saucer under discussion. And that Cretan bowl shares with the Cypriote bottle and a related Palestinian frag-

[1] Frankfort, *Journ. Egypt Arch.*, xii, p. 80, especially 94.

[2] Ibid., p. 90, with note 6. In Crete appear animal-shaped seals (Xanthoudides, loc. cit., pl. viii, 821, 822; xiii, 1040, 1044) closely related to such Asiatic examples as Delaporte, Catal. du Louvre, A. 1, 2, 3, etc., 12, 13, etc., 1088, S. 197, etc.; *Journ. Egypt Arch.*, viii, pl. xxv, 1–4. See also Evans, *Palace of Minos*, i, p. 119. We also find the typical *tête bêche* arrangement (Xanthoudides, loc. cit., pl. i *c*, 646; xiii, 1092, 1113, 1129), which is really the "reversible type" of Dr. Hogarth's Hittite seals (*e.g.* Nos. 12, 15, 81, etc.); Contenau, *La Glyptique Syro-Hittite*, Nos. 129, 195. Chantre, *Mission en Cappadoce*, 160, fig. 136. Finally, a small Cappadocian bronze stamp (Chantre, *Mission en Cappadoce*, pl. xxvi, 12) in the shape of a goat, typical of all Western Asia, and attested in certainly native bronze contemporary with the XIIth Dynasty at Byblos (*Mon. Piot*, xxv, p. 226, fig. 22), has on its base the "maze-pattern" so well known in Egypt and Crete (Xanthoudides, loc. cit., pl. viii).

[3] The only two examples (see p. 123, n. 4) of an earlier date than E.M. III (Evans, *Palace of Minos*, I, fig 37 and 38 *a*) may go back to the Nilotic influence, as Sir Arthur Evans rightly remarks. Our assumption ("Studies," I, p. 132) that this particular class of glyptic is typical of the Delta, but dependent on Syria finds support in Dr. Scharff's proof (*Abusir el-Melek*, p. 7 sqq.) that the so-called Second Predynastic civilization, with Syrian features is original in Northern Egypt, including the eastern part of the Delta.

[4] Seager, *Mochlos*, fig. 7 II *l*.

[5] *Vide supra*, pp. 76 sqq.

[6] *Vide supra*, pp. 81 sqq.

[7] Gjerstad, *Studies on Prehistoric Cyprus*, 149, No. 1.

ment[1] a motive quite foreign to Crete—sets of small concentric circles. Obviously, the Mochlos vase is an importation, and the stream which affected Cyprus reached apparently further to the west, though it only made itself faintly felt. We do not know whether the significant vessel reached Crete directly or via the islands. For from the islands the originally Danubian spiral decoration now penetrates Crete, and, in fact, in the same tomb that contained our bowl were found two ivory seals, one with a spiral design paralleled in the Danubian region,[2] the other with the "monkey-like imp," a sphragistic motif which we have shown to have its home-land in North Syria.[3] The material of most of the seals, ivory, proves at least the existence of foreign connections, though in this case it may have come from Syria as well as from Egypt, since now we know that relations with both existed. Thus, the Third Early Minoan Period[4] begins at least about 2400 B.C.; its lower limit we shall have to discuss later.[5]

Chronological systems.

The division between the Second and Third Early Minoan Period is already extremely difficult to determine in Crete, and no corresponding delimitation can

[1] Macalister, *Gezer*, iii, pl. cxlv, 4.

[2] Seager, *Mochlos*, p. 34, fig. 12; ii, 41. *Vide supra*, p. 117, n. 6.

[3] Ibid., fig. 11 and p. 34; ii, 42. Cf. *Journ. Egypt Arch.*, xii, p. 94.

[4] It seems impossible to claim with Sir Arthur Evans that similar Cretan glyptic existed already in E.M. II. The Sphoungaras seal (*Palace of Minos*, i, fig. 65; cf. Edith H. Hall, *Excavations at Sphoungaras*, p. 53 sqq.) comes from too uncertain surroundings to allow of much dating evidence. White-on-black E.M. III ware was anyhow found in the deposit as well (loc. cit., p. 51). The three seals from *Mochlos* (Evans, loc. cit., fig. 63, 64) derive from two tombs (II and XVIII), the last of which cannot be more closely defined, and the first of which produced also the saucer discussed in the text. I admit that the combined opinion of Sir Arthur Evans and Mr. Seager is worth a good deal of evidence. But nevertheless I cannot, with these scholars, separate this tomb from E.M. III, and consider it purely E.M. II. If we consider the circumstances of the finding (Seager, *Mochlos*, p. 24) we find that the main deposit was found in a cavity 70 cm. deep. For 20 cm. *above* its rim the soil seemed undisturbed, but in this layer was found the saucer, just below a stone bowl (Seager, loc. cit., fig. 7 II *g*), which is derived from the Cretan type copied after IVth Dynasty Egyptian vessels. With this stone bowl was a jug of the E.M. III white-on-black ware (II *b*), which cannot be separated from another small jug (II *r*) found immediately below the first, together with the saucer. This group of four objects therefore belongs together, and is apparently of E.M. III date, which therefore dates the importation of the Syrian saucer. As to the seals, their internal evidence points to the same period, and the main deposit may therefore have extended into E.M. III as well. It seems impossible to separate Seal II 42, with its "Danubian" design, closely paralleled by the decoration of a definite E.M. III side-spouted jug from the bulk of the spiral decoration which appears in E.M. III, while the other seal (II 41) is closely related to another one also found at Mochlos in E.M. III surroundings (*Am. Journ. Arch.*, 1909, p. 280, fig. 3), and which moreover links up in design with the other E.M. III glyptic (*e.g.* Xanthoudides, loc. cit., pl. xiii, 1039, 1045). The developed Cretan glyptic is therefore one of the new features which differentiate the E.M. III from the E.M. II Period, and it is not merely a descendant of that of E.M. I (if that ever took root in Crete, see p. 122, n. 3), but was strongly dependent on Syria, though it soon finds a characteristic and peculiar way of expression in the newly derived material.

[5] On the long duration of the First Early Minoan Period, see above, p. 119.

be effected either on the mainland nor on the Cyclades[1]; the attempts to do so lack, at least at present, sufficient foundation, and much confusion and disagreement both in terminology and understanding could be avoided if it were always kept in mind what is the purpose of the various sections which science, always more or less arbitrarily, has to make in the continuous cultural development.

Each excavation deserving that name produces archæological material in some classification which is determined by the objective evidence provided by the circumstances of the finding. Even if comparative research may extend such classifications, the aim of all such arrangements is not found in itself—it is really necessary to state this explicitly nowadays—but in the historical conclusions to which it may lead. But as our material reflects nothing more, even at its best, than a minute section of the past civilization, we generally cannot discern which changes are accidental or due to local conditions and which reflect historical events of wider importance. Therefore, it is sound to distinguish, for historical purposes, main periods when important changes are felt over regions of some considerable extent. Within these main periods, the historical value of which is assured by the wide occurrence of their distinctive features, one has to maintain as local peculiarities the more minute archæological classifications *of each site* which may *not* be generalized without due justification; and for these local classifications it is essential to work on the principle that as many distinctions must be made as are possible at all; for in any case our schemes are but simplifications, skeletons, if compared with the rich variety of reality which can never be revived to the full, and every neglect of even the slightest evidence not only removes us further from the truth, but it also hampers scientific progress because new evidence of subsequent research will take a long time to find its place in a scheme where the vague suggestion of its existence by earlier material is ignored. An archæological classification can thus never be too minute; especially as regards succession of types and other chronological evidence. But obviously, one is not justified in generalizing upon and applying to a more extensive region, the number of classes necessarily obtained on one site, even if it is known that a related civilization existed over a wide region. It is only possible to connect the classifications from the different sites if there is material which allows *cross-dating*; and if, by some such scheme, it eventually occurs that within the same *historical*

[1] Messrs. Wace and Blegen are certainly right in asserting that Phylakopi gives material which suggests a tripartite division. Early Cycladic I would be the period preceding the First City, in which Amorgos, Paros and other islands with "herring-bone" ware, marble idols, etc., were inhabited. The founding of the First City and the period with the pottery of Phylakopi (¶3, and some of ¶4), would be E.C. II; the "patterned Urfirnis," geometric designs in lustrous paint (¶6), and just the beginning of "Mattmalerei," would be E.C. III. But the other islands hardly fit in, unless one wants to make the finds from Syros and Siphnos, with their very peculiar black-polished and painted wares, in their entirety E.C. II, while Paros and Naxos both have only material to fit in E.C. I and E.C. III. It seems, therefore, better at present to confine the three sub-divisions to Phylakopi.

period the archæological class II on one site may prove to be contemporary with class III, for instance, from another, yet this seems to be the only way in which the historian can do justice to the archæologist and *vice versa*.[1]

We found that the beginning of the Copper Age in the Ægean, which is contemporaneous on all sites and produces important changes throughout, was the beginning of a period of great historical importance: we called it the Early Ægean Period (Early Minoan, Early Cycladic, Early Helladic). We shall see in the next chapter where it ends. Within this period we have been able by means of cross-dating, to distinguish two stages which effect the whole area under discussion; an earlier one of wide and not yet regulated intercourse, with the Cyclades fully inhabited while on the mainland Neolithic conditions are practically continued by a mixed population of indigenous and recently immigrated elements; secondly, a later period, in which

[1] Rightly Mr. Wace (*American Journ. Arch.*, 1926, p. 202) objects to Mr. Forsdyke's assertion (*Cat. Vases Brit. Museum*, i, p. xi) that for the Cyclades and the mainland "there is good reason to suppose that their earlier periods reflect the distinguishing Minoan phases." The material adduced in our text simply disproves that. On the other hand, there is only a slight foundation for Messrs. Wace and Blegen's attempt to divide the Early Cycladic and Early Helladic periods into three subdivisions (*Ann. Brit. School Athens*, xxii, 186, and preceding note). Surely, here is again the suggestion of Sir Arthur Evans's excellent scheme, which, however, is based on stratigraphical evidence from his site, and therefore works well at *Knossos*; there it has an objective foundation in actual fact, but no inherent logic, as the distinguished excavator, followed by Mr. Forsdyke, supposes, thinking that it reflects "the natural principle of rise, maturity, and decay," a principle which does not even apply to the successive stages of Crete, though perhaps one feels in Sir Arthur Evans' representation a slight tendency to put the material in that light. Most important, however, is the fact that his three main periods really *do* represent three successive stages of the greatest historical importance in the development of the whole Pre-Hellenic civilization. Even if the subdivisions are, as in the case of E.M. II and E.M. III, not easily distinguishable, one has to admit, with Glotz (*La Civilisation Egéenne*, p. 25), if not an "*avantage logique*," at least an "*avantage mnémotechnique*," but their validity is locally restricted. As to alternative schemes not a single one has been put forward which alters the *sequence of remains* in any way; thus they do not add to our insight; and a change of the ordinary terminology is therefore nothing but a wilful creation of confusion. On the whole, they derive from scholars who either have a less comprehensive knowledge than the discoverer of Knossos, or who are prepared to reject a scheme based on the *complete* archæological material, because it happens not to reflect *that* aspect with which they are particularly concerned. So M. Franchet (*Rapport sur une Mission en Crete*, p. 11) substitutes four "Bronze Ages," thus reversing scientific methods by applying the clumsy makeshift with which the scarcity of material compels prehistory to be satisfied, to a high and very much differentiated civilization. Reisinger (*Kretische Vasenmalerei*, 18, and elsewhere) followed by Gotsmich (*Entwickelungsgang der Kretische Ornamentik*, p. 7, and *passim*) reject the accepted scheme because it is difficult to separate E.M. III from M.M. I vases, and because the naturalistic style of vase-painting is common in M.M. III and L.M. I. As if every historical event *must* affect the craftsman in his shop. Fimmen's criticism (*Kretisch-Mykenische Kultur*, p. 128) is, as always, sound and moderate, and does not talk (like Gotsmich) of "Kulturepochen," when he means styles of pot-painting; but he also loses sight of the fundamental change which marks the beginning of the Middle Minoan Period, *i.e.* the coming into prominence of Central Crete, at the expense of Eastern Crete, a change reflected in the founding (already in M.M. I) of the Knossian palace. *Vide infra*, p. 136, n. 1.

the small Cyclades are in decline, but certain centres in ever-increasing prominence and wealth ; Crete is flourishing and developing independently, and the mainland is permeated by and gradually subjected to influences from the Cyclades. All further distinctions of periods have, in the present state of our knowledge, a restricted and local, but no general validity.

Westward Extension.

¶18. The story of the growth of the Early Ægean civilization deserves an epilogue on some phenomena in and beyond the Adriatic which affirm most strikingly what our preceding investigation led us to assume. If on various occasions scholars have noticed that certain ceramics appearing further to the west had features in common with those from Thessaly, these comparisons were doomed to remain more or less fortuitous. For what connection could there be between a pastoral and agricultural inland civilization which flourished in the Thessalian plains and settlements in Italy or Sicily ? The latest discoveries, however, give us the clue. The interest of the Thessalians certainly did not extend beyond the mountains which enclose their territory. But some of the wares, believed to be typical of Thessaly, are, as we now know, also found outside that region ; and if their influence is felt in the West that is not due to some inexplicable enterprise of Thessalian peasants, but to a further extension of that overflow from the Cyclades which changed so thoroughly the civilization of mainland Greece.

If we ask whence any Greek influence acting across the Adriatic is likely to radiate, there is only one region which suggests itself : neither the rugged Peloponese nor wilder Ætolia and Epirus need be considered. But the Corinthian gulf possesses many a spot where the beach, on which the ships were drawn up, is sheltered by hills, while, more important still, the plain on its southern shore was rich enough to maintain a comparatively large population.[1] Thanks to the research of Dr. Blegen and Mrs. Walker-Kosmopoulos we know that the plain was inhabited in Neolithic times, when trade was not yet a source of wealth. But we also know that Corinthia soon became an important centre of the originally Cyladic civilization which with its commercial tendencies invaded the mainland along the trade-routes ; we further know that the Urfirnis ware, which is the archæological exponent of this civilization, is found for a time side by side with the earlier trichrome ware at Gonia. It remains to be seen, when the finds from Corinth are published, whether a similar condition existed in connection with the red-on-white wares which, as we have seen, are found in Corinthia as well.[2] For the highly polished fabrics of Danubian descent this fact is already proved by the excavation of Korakou.[3]

[1] See Dr. Blegen's important article, " Corinth in Prehistoric Times " (*Amer. Journ. of Arch.*, 1920, pp. 1 sqq.).

[2] *Vide supra*, p. 11, with notes.

[3] There it is typical of the deepest layers, and *gradually* superseded by " Urfirnis " ware (Blegen, *Korakou*, p. 14).

Thus Corinthia with its eleven inhabited sites offers in the Early Helladic Period a chequered aspect to the anthropologist and archæologist: there are remnants of what we have considered a comparatively aboriginal population of Central Greece (traceable by red-on-white ware)[1]; then there is a settlement of Tripolje immigrants at Gonia (trichrome ware) and one or more others where recent arrivals from the Danubian region (black-polished ware) live side by side with the earlier inhabitants. And amongst all these people, whose views on economics are almost identical with those of innumerable generations of Neolithic predecessors, there are the latest newcomers, eager, enterprising emigrants from the small islands in the Ægean where the coming of metal had revealed undreamt-of possibilities of wealth and almost unlimited scope for action. Is it likely that such people would be satisfied to use their nautical craft merely to cross the gulf from Corinth to Thisbe as ferrymen in the great trunk-road to the North? Certainly we should expect them to venture out of the gulf which opens towards the West. And there is proof that they did. *Corinthia.*

Leukas is the first station where we find their trace, and there it is unmistakable. Certain tomb groups[2] contain the purest Cycladic forms; sauce-boats, calices, collar-necked vases, askoi.[3] Here then we do not find merely their influence; they must have settled on the island. But in a cave, Chirospilia, on the south-west coast of the island, which was used as a dwelling-place occasionally, other wares appear as well, and in such a rich variety that, especially as the material is not yet published, it is impossible to deal with it thoroughly.[4] There are hollow feet of vases in thin red wares which are like those from Neolithic Thessaly (A 1); but to understand their presence we have to recall that these also occur in the deepest layers at Vinça,[5] and thus appear to be typical for the Northern Balkan peninsula, in Neolithic times just as three- or four-legged "thrones" of pottery and certain incised wares. These feet and rough incised wares[6] may belong to the earliest civilization of the island which would thus be identical with that of the mainland. Problematic is a curious rough, reddish, gritty ware, covered with a thin white slip, on which are painted linear designs in red and yellow-brown. The same ware was recently found by the Italian School on the Acropolis at Athens. It looks like some local elaboration *Leukas.*

[1] *Vide supra*, ¶ 3.

[2] Marked R in the Museum in Leukas.

[3] Bossert, *Alt Kreta*, 2, figs. 1, 2.

[4] A preliminary account has been given by Velde in *Zeitschr. f. Ethnol.*, 1912, pp. 852 sqq., and the final publication by Prof. Dörpfeld, in which Prof. Götze will deal with the pottery, is forthcoming.

[5] *Vide supra*, p. 35, n. 1. The combination is the more probable because the big flat knobs of the Thessalian A 1 wares occur in Leukas as well (*Zeitschr. f. Ethnol.*, 1912, p. 857, fig. 10).

[6] *Zeitschr. f. Ethnol.*, 1912, p. 858, fig. 9. These are also found on the other side of the Adriatic (*e.g.* Mayer, Molfetta and Matera, pl. iv; ix, 20; x, 1, with *Zeitschr. f. Ethnol.*, loc. cit., figs. 10, 11). The *tremolo* so common in Neolithic Italy seems not to be found in Leukas. On the other hand, incised ware similar to that from Chirospilia is found in the earliest Thessalian layers (Tsountas, *Dhimini, and Sesklo*, pls. xiii, xiv, especially No. 8).

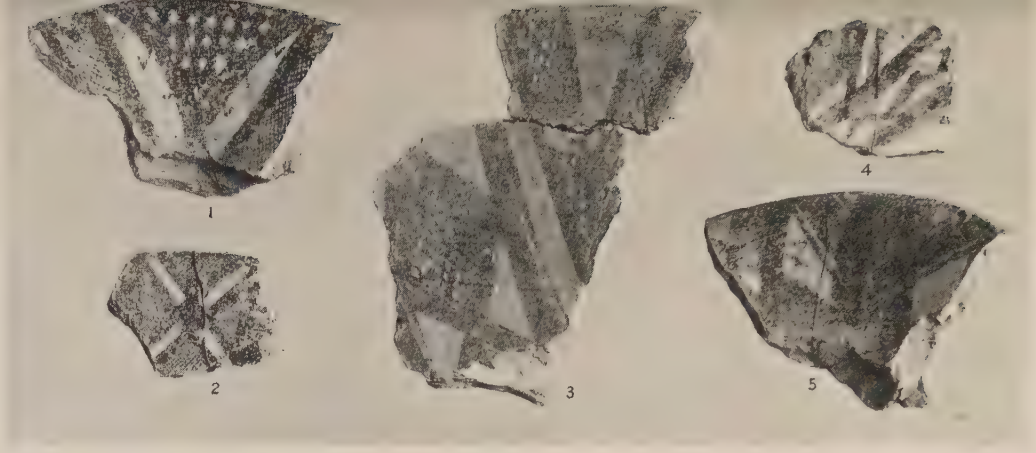
of the Central Greek red-on-white ware, and one is, therefore, inclined to see in it a fabric belonging to Attica which was brought to Leukas by the westward stream from Corinthia, which is so amply testified by other material from this same cave.[1] We find there, in fact, all the various fabrics in use near the isthmus. There are painted designs in red or reddish-brown on a white slip, including the wavy lines, and chequer-boards known also from Chaeronea, which are marks of a civilization common to the whole of Central Greece. There are dots strung on a line and rims with rows of little triangles along their inner side, two motives which are common among the B-wares which form the somewhat later development of the red-on-white wares and are again best represented in the Chaeronea Museum ; they overlap, as we have seen, in Phocis and Boeotia with the Danubian wares.[2] These latter are also represented at Chirospilia in the shape of a finely " beaded " variety of knobbed ware,[3] occasionally found also at Orchomenos ; of course, the probability remains that this ware came to Leukas from the mainland directly.[4] But that cannot reasonably be supposed to be the case with the trichrome ware, ultimately descended from the Tripolje culture, which is also found in the cave, with its red bands bordered with black on polished buff, exactly as it occurs at Gonia in fact. Finally, sherds with white-painted designs on " Urfirnis " equalling the Hagia Marina ware, class C, II at Korakou and Mycenæ, and a little vessel of ordinary " Urfinis " ware with a pair

[1] The sherds in the Acropolis Museum coming from the recent excavations of the Italian School of Archæology at Athens, contain, besides those peculiar trichrome wares, also a specimen of the black-bordered red-on-polished-buff ware and several fragments of painted island ware identical, even to the pattern, with that from Syros. Thus it is certain that Athens took part in the movement, and there is no difficulty in assuming that, in addition to the routes mentioned above, a branch route leading from Attica via the Isthmus to Corinth was operating as well ; that would explain why the enigmatic trichrome fabric (red with brown lines on white, thin slip, reddish, gritty ware) is known to us from Athens on one hand, and on the other from Leukas.

[2] Motifs common to Chaeronea and Leukas are, *e.g.* Wace and Thompson, *Preh. Thessaly*, fig. 120 ; 140 *d* ; *i.e.* in the Chaeronea and Llianokladhi ware, not with the purely Thessalian varieties. As, in contrast with the red monochrome ware (A1), we have no evidence that this red-on-white ware was made outside Thessaly and Greece, and as, except the footed calices of the A1 ware, all certainly native pottery in Leukas is dark-faced (including black flat-knobbed A1 sherds ; see note 3), it is hardly possible to claim that an extension over the Pindus, Ætolia and Epirus of the red-on-white ware would be responsible for its appearance in Leukas. It was moreover confined to the *plains* as a rule.

[3] *Zeitschr. f. Ethnol.*, 1912, p. 862, fig. 13 ; but the ordinary Danubian knobbed ware, and also the variety known in Greece (A5 γ), appear as well.

[4] We cannot decide whether Leukas first possessed only the incised ware (*vide supra*, p. 127, n. 6) and the red ware corresponding to the Thessalian A1 fabric, and subsequently received the Danubian wares just mentioned, or whether all these fabrics were originally contemporaneous in Leukas and the North-Western Balkan peninsula, while the later appearance of the knobbed ware, A5 γ, and the other black-polished Danubian wares in Greece is due to the fact that Greece did not originally form part of the Danubian civilization, so that it only arrived there as a consequence of the great migration. This seems also to be suggested by the evidence from Vinça, where the black wares and the red calices occur side by side. It seems uncertain whether the wish-bone handles at Chirospilia belong to the earliest or to a later stratum.



POTTERY OF THE FIRST SICULAN PERIOD. Scale about 1 : 15.

1, 2, 4 and 5. From Castellucia; 3 and 7. From Monte Tabuto; 6 and 8. From Vallelunga.

of vertically pierced lugs completed the collection, together with a bone-tube decorated with incisions such as we know from the Cyclades, Hissarlik, and Bos Euyuk,[1] and a small double vessel, two collar-necked vases, in fact, combined with a curious high loop-handle.

Apulia.

It is fortunate that the first station of the westward quest of the Early Helladic Corinthians testifies to their arrival by so rich and varied a material. For now we can do justice to the fainter traces which it left on further shores, in Apulia and Sicily. Here the traders from Corinthia had, however, no monopoly. As Dr. Maximilian Mayer has shown in his exemplary publication,[2] South-Eastern Italy underwent very varied influences. In chalcolithic times we find a mixture of ancient native features and others pointing to the northern and eastern coasts of the Adriatic, imported ware and its imitations side by side. We may be satisfied here with stating that in the museum at Bari one recognizes occasional examples of the trichrome ware with its red bands bordered by black on a buff background and even the enigmatic fabric known from Attica and Leukas,[3] and carefully cross-hatched designs or chessboard patterns in red paint on a white slip, which share with the corresponding fabric of Central Greece not only these motives, but also the bordering of the inside of the rim by rows of triangles or occasionally loops, as the painted ware from Syros shows.[4]

While there can be no doubt as to the ultimate origin of these wares, the most peculiar pottery of Molfetta and Matera remains unexplained; its Z figures[5] and its triangles[6] may, perhaps, be understood as blundered renderings of Chaeronea designs, but the spiraliform decorations[7] suggest so strongly prototypes in free-field style that one looks for a way of connecting Molfetta with the Black Earth Region. Now, it has to be admitted as a possibility that during the great migration which brought the Tripolje people into Thessaly and Central Greece, a body of these immigrants may have gone westward, just as another group had struck southward and settled at Gonia. But, unlike these last, those who went westward found no fertile plain which could meet their habits and needs. They must have proceeded till they were stopped by the Adriatic, and the very barrenness of their new homeland would have compelled them to take to the uncongenial sea, were it only to fish. Eventually they may have taken part in the coasting traffic up and down the Adriatic,

[1] *Vide supra*, p. 129, and *Zeitschr. f. Ethnol.* 1912, p. 856, fig. 7, left-hand side.

[2] *Molfetta und Matera*, 1924.

[3] Bari Museum, case 9.

[4] Ibid., case 17, Nos. 5, 68. Mayer, *Molfetta und Matera*, 173, figs. 43, 44; ibidem, pl. xix, 5; xx, 3, 7, 9 may well be the result of the same inspiration on similar ware. See also ibid., p. 156. *Mon. Antichi*, xx, figs. 65, 68. Compare also Mayer, loc. cit., pl. xi, 5, with Wace and Thompson, *Preh. Thessaly*, 175, fig. 119 *b*, and Tsountas, *Dhimini and Sesklo*, pl. xvii, 2.

[5] Mayer, loc. cit. 128, fig. 33; pl. xviii, 6, 7; xix, 12.

[6] Ibid., pl. xviii, 11; xix, 5; xx, 1.

[7] Ibid., p. 173, fig. 4; pl. xviii, 1. Curiously enough those free-field designs are often applied in arbitrarily limited belts round the vessels.

and, anyhow, the way would have been prepared for a mixing of the peculiarities of their civilization with those of the Istrian shores. In this way we may explain the fact that at Molfetta we find on the same vessels designs with reminiscences of Tripolje ware and handles of indubitable Bosnian character.[1] We do not possess a single find to substantiate this hypothesis, but there is no objection which can be raised *a priori* against the assumption, while the Apulian finds are distinctly in its favour.

But if this theory would explain the fact that pot-painting was practised at Molfetta, it does not in the least account for the occurrence there of red-on-white wares, which in Greece antedate, on the whole, the pottery of the Tripolje immigrants, but in Phocis, Boeotia, and the Corinthia seem to have overlapped with the early part of the succeeding period; neither does it explain the appearance of the presumably Attic trichrome ware nor even of the Gonia (Thessaly B3 *b*) trichrome examples at Molfetta, for all the certainly native vessels in Apulia, which we have tried to explain by the above hypothesis, are monochrome. The presence of red-on-white and of trichrome fabrics in Apulia can only be explained as due to intercourse with the region on the opposite shore, where they co-exist in exactly the same way; as in Leukas they are due to the traders from Corinthia.

Of course, an important difference between Leukas and Apulia cannot be overlooked; on the island we find "Urfirnis" ware in the Chirospilia cave and also in tombs; and the latter prove that its makers actually settled in Leukas, which, after all, is geographically one with Greece. Certainly we cannot claim a settlement of "Urfirnis" makers anywhere in Apulia; but that affects neither our thesis nor the finds with which we are here concerned. "Urfirnis" was a mere household ware, and entirely unfit for exportation. But is it so unlikely that the Corinthian traders of Cycladic descent, who occasionally visited the Apulian shores, would take with them as barter or as presents some of the quaint and gaudily coloured vessels which the older population, with which they shared their new homeland, had produced from time immemorial? If these were survivals from Neolithic times, they were, anyhow, sure to be appreciated on the other side, where the Copper Age only started very slowly to effect its great changes and where, as the native wares from Molfetta and Matera show, the earlier fashions in matters of ceramics still prevailed in the Chalcolithic Age. Thus we can trace the route of our Early Helladic merchants from Corinthia by a commodity which certainly played only a very subordinate part in the traffic.[2] And by its aid we may even be able to follow them to Sicily.

[1] Compare the handles of Mayer, loc. cit., pl. xviii, 5; xix, 12; xx, 9, with *Wissensch. Mitth. aus Bosnien Herzogowina*, 1897, p. 74 figs. 246, 250, 252; ibid., 1893, pl. xxvi. But in Apulia there is an over-rich development of this device (Mayer, loc. cit., fig. 52) though even Butmir (Hoernes *Urgeschichte*, 283, fig. 1) shows the plastic bull's head.

[2] Mayer, loc. cit. 141, quotes as likely objects for export from Apulia: cattle, skins, wood, slaves and, later, horses. The Corinthians may have imported what little copper is found in Apulia, and perhaps olive oil.

Sicily.

There, however, we find a still more complex situation than we had to face in Apulia. Influences from east, north and west intermingle, and it is a hazardous undertaking to try to distinguish traces of intercourse with Corinthia where such a whirlpool of currents and cross-currents has left its impression. The earliest civilization, which is Neolithic, stands isolated at present. As usual in this period, it has a very strong character of its own.[1] The succeeding First Siculan Period presents a great contrast. The old settlements are left and the new villages are situated near good harbours in the eastern part of the island. Copper appears sparingly, but then reveals Ægean origin.[2] Mosso, whose imagination, however, was dangerously lively, records the occurrence of Cretan "horns of consecration," together with a deposit of *Pectunculus* shells, which had a religious meaning in Crete.[3] Curious knobbed bone objects,[4] explained by Prof. Petersen as ornaments of wooden dagger-sheaths, supplement the evidence in some of the many cases where the metal objects themselves have been looted; they are extremely important, as they also occur at Hissarlik II, where one, at least, can with great probability be assigned to the Second "Bauperiode."[5] Whether they came from Troy directly or via the Cyclades it is impossible to say; one example has been found as far afield as Portugal.[6] Traces of intercourse with the West are not lacking in Sicily, and especially with Sardinia there are many points of contact.

The pottery of the First Siculan Period (Pl. VIII) is in so far well in keeping with the chalcolithic character of the period that it continues the Neolithic usage of elaborating this essentially local product in a peculiar way; it has decidedly a

[1] Herein I must agree with Fimmen, *Kretisch-Mykenische Kultur*, p. 109, as against Peet, *Stone and Bronze Age in Italy*, pl. 135 sq., followed by Childe, *Dawn of European Civilization*, 88 sq., who claim for the Stentinello ceramics a common origin with those of Neolithic Crete.

[2] Peet, loc. cit., 241, 281 sqq.

[3] *Mon. Antichi* xviii, 643, sqq. with fig. 9, pl. v. However, one need not claim an ethnic change of any large extent, but an assimilation of foreign features by the old native stock. See *Peet*, loc. cit., 202, 278 sq.; Von Duhn, *Italische Gräberkunde*, 66 sqq; Petersen, in *Roem. Mitth.*, 1898, p. 180 sq. One may agree with Childe (*Dawn of European Civilization*, p. 96) that there is no reason to derive the burial custom of the First Siculan Period from the west, whence the megalithic monuments spread (Leeds in *Liverpool Annals*, ix, 30 sqq.), and one may also admit (as against Fimmen, *Kret. Myk. Kultur*, 110) that the rock-cut tombs of Sicily are very similar to those found at Euboea and elsewhere in the Ægean. But nevertheless one need not claim any direct connection with the Ægean, for Von Duhn (*Italische Gräberkunde*, 66 sqq.) shows convincingly that the First Siculan graves develop out of those of the preceding period, and the similarities between the Ægean and Sicily may well represent similar consequences of identical tendencies acting in similar surroundings. Von Duhn's view (loc. cit. 70) that the incipient use of copper facilitated the preparation of stone tools and thereby the preparation of rock-cut tombs is particularly attractive.

[4] *Bull. Palet. Ital.*, 1882, p. 23; 1892, pp. 1 sqq., and pl. iv, 1, 2; 1893, 30. Petersen in *Roem. Mitth.*, 1898, 164, fig. iv; *Ausonica* i, 1906, 6. The ingenious explanation of these objects as wooden sheaths of daggers is valid, notwithstanding Prof. Orsi's objection that so few daggers are found; for the tombs have been thoroughly plundered through ages.

[5] Hub. Schmidt in *Preh. Zeitsch.*, i, 135, note.

[6] Childe, *Dawn of European Civilization*, p. 96.

character of its own. But two relationships can nevertheless be discerned: the shapes of the vessels point definitely to the head of the Adriatic, and the decoration and to some extent the technique show relationship with the red-on-white wares from Central Greece[1] (see Pl. VIII). The similarity in character of the designs exceeds the scope of mere geometric decoration; the syntax, and even the extravagances such as the combination of incongruent designs (blocked and cross-hatched triangles) and the utilization of overshot lines at the angles are alike on both sides, as Prof. Peet has conclusively shown.[2]

The shapes point as unmistakably to the Southern Danubian region. There we find, from the earliest times of which we know, the "fruit-stand"[3] and the high-handled cup[4] which even show the particularly Danubian feature of the bridged-over or horned handle.[6] The tankard, as we have seen, is a European shape as well,[7] while the Early Helladic types are, as Fimmen rightly remarks,[8] different though based on the same principle; the often-quoted example from Hissarlik[9] is wheel-made and too late to be adduced in this context. It is, however, not impossible to explain both sets of similarities; the shapes of the vessels are largely defined by utilitarian needs. These were apparently answered by those Danubian shapes, and one wonders whether one has not to claim a more or less extensive immigration of people from the head of the Adriatic; it is important that, at Vallelungo for instance and elsewhere, monochrome ware in this shape occurs as well, and sometimes with the *ansa bifurcata*

[1] *Vide supra*, p. 11.

[2] Peet, *Stone and Bronze Age in Italy*, 218 sq. One cannot speak, when there are such detailed similarities, of "zufaellige Uebereinstimmungen der Detailornamentik, die bei Linearmuster immer wiederkehren" (Fimmen, loc. cit., 109).

[3] *E.g.* Wosinsky, *Lengyel*, pl. xlii, 331; xiii, 73.

[4] *Bull. Palet. Ital.*, xvii, pl. v, 23; xviii, pl. iv, 3; ibidem xxi, pl., vi, 6, 11, etc., cf. Wosinsky, loc. cit., pl. xi, 50, vii, 11. In Serbia we have instances from Zokkod Pecuja (Belgrade Museum) also, though not well dated from Bosnia.

[5] *Bull. Palet. Ital.*, xix, pl. v, 54; vi, 8. On Danubian parallels, vide supra, p. 51, n. 2.

[6] *Bull. Palet. Ital.*, xix, pl. v, 60. From Bosnia, *e.g. Glasnik Zemaljskog Muzeja*, vi, pl. v, 5. From Bohemia, Pič, *Cecky Predhistoriche*, pl. xxv, 8.

[7] *Bull. Palet. Ital.*, xvii, pl. v, 18; xviii, pl. iii, 8; ibidem, xxi, pl. vi, 4, 8, 10, 13, etc. On origin, vide supra, p. 115. We cannot, therefore, with Childe, loc. cit., derive it from Early Helladic Greece, where it seems itself intrusive from the north. Fimmen, loc. cit., 109, n, 9, rightly points out that the Helladic tankards are very different from those in Sicily. At Pyrgos in Crete are more closely related forms, which share with those from Sicily the occasional possession of patterns even under the bottom. Thus, the assumption of a common Danubian prototype seems amply to account for all the facts, and it is confirmed by the evidence of the other Sicilian shapes and handles.

[8] Fimmen. loc. cit., p. 109, n. 9. A sign of direct intercourse with the Ægean may be the occurrence at Sette Farina and Barriera near Catania, of covers with arched handles (*Stülpdeckel mit Buegelgriff*) such as are found at Phylakopi (pl. iv, 5; viii, 2); the Sicilian examples have in addition two lugs with each two horizontal perforations. These covers are monochrome, just as the double vessel with high handle, which may derive from the same source. See n. 38.

[9] *Katalog Schliemann Sammlg.*, No. 1880.

or other elaborate types so well known from Bosnia.[1] The decoration, however, is merely an æsthetic matter and could be taken over irrespective of the shapes of the vessels on which it was introduced, if there was an opportunity to learn the technique from its makers. We are obviously not in a position to describe exactly how the process took place. As we said before, the First Siculan pottery, as we know it, is a completely evolved fabric with its own peculiar technique, and its own decorative repertoire ; obviously the use of collective burials, where earlier remains were regularly smashed or removed for later interments, has helped to withdraw from investigation whatever transitional types may have existed. The absence of imported vessels is well in keeping with the rareness of the metal and the extremely long duration of the Chalcolithic Period ; the succeeding Second Siculan Period already contains Mycenæan (Late Minoan III) imports.

From all these facts it is clear that the trade intercourse was *not* very lively but it seems impossible to explain the influence which the red-on-white ware from Central Greece has had on Sicilian ceramics without accepting, here again, the intermediacy of the Corinthian traders. The occurrence at Monte Salia of the double vessel with the loop-handle, also known from Leukas, may point in that direction, as its nearest parallels (which are not, however, identical) are found on the Cyclades.[2] And the aforesaid assumption seems in fact unavoidable, because we also have to account for the appearance, at Megara Hyblæa, of the trichrome ware in its well known form of red bands outlined in black on a polished buff surface, a ware occasionally even appearing with quite Thessalian shapes.[3] It is found in a Neolithic context, with the usual incised wares of the earlier periods. Thus the order of appearance of the trichrome and the red-on-white wares is *reversed* in Sicily, which, again, can only be explained if we derive them from a region where both existed side by side for some time ; and the only region of which we know that that was the case is Corinthia. If we derive the Sicilian examples from there it becomes indeed a matter of accident, or, at least, of unaccountable and secondary circumstances, which of the two should reach those further shores first. We may explain their appearance best perhaps by postulating the actual arrival of settlers, or rather of slaves or women of the earlier stock of Corinthia traditionally acquainted with this art of pot-making, sold by the Cycladic-Helladic traders to Sicily.

[1] The Second Siculan Period shows again, besides Ægean features, a number of shapes and designs, the nearest parallels of which are in the Museum at Belgrade. And there are East Alpine parallels for the incised style, Peet, loc. cit. 220, fig. 85, to be compared with Hoernes, *Urgeschichte*, p. 339, no. 8.

[2] *Bull. Palet. It.*, 1923, pl. iii. Compare *Athen. Mitth.*, 1919, pl. 27, fig. 21, *Phylakopi*, pl. xi, 12, while *Athen. Mitth.*, 1919, pl. 57, figs. 60, 61, and Dummler, *Kleine Schriften*, i, p. 60, fig. 7, and also *Athen. Mitth.*, 1896, pl. xiv, 4, 5, have the high handles.

[3] Orsi in *Mon. Ant.* xxvii, with pl. A-C. Compare the restored shape of the vessel No. 2 on pl. C with Tsountas, *Dhimini and Sesklo*, 215, fig. 118, Wace and Thompson, *Preh. Thessaly*, fig. 11 *b*. But on the other hand, the bowl of pl. A, No. 2, with its strangely placed handle, is a Western Mediterranean shape, or at least Sardinian. See *Mon. Ant.*, xi, pl. ii, 2.

Anyhow, our rapid survey of the phenomena characterizing the Chalcolithic Period in and beyond the Adriatic fully confirms what the study of native remains has taught us about the mercantile character of Early Ægean civilisation, to the further development of which we now have to turn. But we have also gained one important chronological indication: the second "Bauperiode" of Hissarlik II falls in all probability well into the latter part of the Early Ægean Period; for the knobbed bone objects dated to that stage, "or earlier," at Hissarlik appear in Sicily in a well-developed First Siculan context, on which therefore the various influences traced in this paragraph must have worked already. Seeing the uncertainty which admittedly exists in the co-ordination of the ceramics and the architectural remains of Hissarlik, this indication is, notwithstanding its comparative vagueness, of some value.

Malta.

It is highly unsatisfactory to have to conclude our research at this point. For we have touched problems which well deserve further investigation. There is first the remarkable civilization of Malta, called Neolithic because no metal has been found with its remains, possessing an exceptionally beautiful and highly specialized ceramic art, a naturalistic sculpture which renders human figures in the round and animals in relief, and lastly a finely balanced spiral decoration. Fortunately, it is dated by the occurrence of one of the knobbed bone-objects[1] similar to those from Castellucio and Hissarlik II, 2, and thus one cannot bring its spirals into connection with Crete, where, moreover, the pure spiral decoration disintegrates as soon as it appears.[2] It may be surmised that its population originally hails from Africa, and thus would not have been originally in the possession of pottery; no Neolithic North African pottery is known, as the Dolmen ceramic of Tunisia, and Mauretania is found in conjunction with metal, and, as Prof. Myres has emphasized, the esparto grass provides in a large North African province an entirely adequate material for the production of all kinds of vessels.[3] The small island, fit to maintain a population, but offering nothing to induce foreign traders to call regularly at its shores, may, by such occasional intercourse as is testified by the knobbed bone object, have become acquainted with a ceramic art such as was practised in Sicily and Sardinia, which it then elaborated in so striking a manner. In the same way, the running spiral-belt of the Danubian region may have reached Malta. We know that the pot-forms of the First Siculan Period derived from there, and if the Sicilians did not adopt the spiral, except in one case,[4] where it appears in stone relief, as in Malta, this abstention is a matter of artistic mentality. But after

[1] *Archæologia*, lxx, 195, fig. 19, top row.

[2] *Vide supra*, p. 117, with n. 3.

[3] The most peculiar handles built in into the wall of the vessel ("tunnel-shaped," Peet), *Archæologia*, lxvi, pl. xxv, 2; xxvi, 1, 2, recur in similar form in Sardinia (*Bull. Pal. It.*, xli, p. 111, fig. 6); compare also the curvilinear ribbon-design of *Mon. Ant.*, xix, p. 483, fig. 55, *Bull. Palet. It.*, xli, pl. 109; 119; 12.

[4] *Bull. Palet. It.*, xviii, pl. vi.

Adama van Scheltema's penetrating and illuminative study,[1] we should readily expect that the naturalistic Maltese would gladly adopt it, and we see it in their hands blossoming out, full as it were of vegetable life,[2] just as in Crete a similar mentality in the later Kamarès period leads to similar phenomena. It is clear that in the contrast of Sicily and Malta and in the similarity, independent of contact, between Malta and Crete, we touch on problems of race again, which cannot be treated satisfactorily without dealing with the whole problem of development and spread of megalithic monuments, of which Malta possesses such astounding specimens.

Secondly, the incompleteness of this paragraph becomes manifest in the fact that we have not dealt even to their full extent, with the relations between the Ægean and the Western Mediterranean. One knobbed bone object has been found as far afield as Portugal.[3] Prof. Peet establishes by the occurrence of statuettes and beak-spouted jugs, a branch route from Sicily via Sardinia into Liguria.[4] It is obvious that these questions cannot be discussed profitably within the scope of this volume. For if the present "Studies" have made one fact clear, it is certainly that only the most comprehensive, and at the same time most detailed, analysis of the phenomena in surrounding and related regions justifies us in concluding anything as to the nature of what is observed in one of them. North Africa, Spain, France and Britain cannot be dealt with in our inquiry into the earliest interrelations of the Ancient Eastern Cultures.[5]

[1] *Die Altnordische Kunst in Europa*, 86 sqq, 63 sqq.; Schuchhardt, *Alt Europa*, 180 sqq. rightly describes the spiral decoration in Malta (and Crete) as "das lebendig werden des linearen Ornaments."

[2] E.g. *Archæologia*, lvii, 132, fig. 2, pl. xv, 3; xvi, 1; xxl, 3, 4; xxii, 1, 3. Ibidem, lviii, p. 287, figs. 6, 7; p. 280, figs. 10, 13, 14; p. 282, fig. 18; pl. xxxiv, 3, 4; xxxvi, 1; xxxvii, 1, 2, and xl.

[3] Childe, *Dawn of European Civilization*, 96.

[4] *Stone and Bronze Age in Italy*, 284 sqq.

[5] Cross-dating and relative dating, which we shall discuss when we consider the rôle of Hissarlik II in the Bronze Age (¶ 20) excludes the possibility of ascribing to the Western Mediterranean an important stimulating influence on the East as, Professor Schuchhardt does (*Alt Europa*, 145 sqq., and *passim*). On the date of the El Argar culture (Siret, *Les premières âges du métal dans le Sud-Est de l'Espagne*), a crucial point, see Childe, *Dawn of European Civilization*, 129 sqq. See also supra, p. 106, n. 9. Instead of a stream from west to east in the Mediterranean we believe we can discern, after the westward movement from Anatolia, a continuation of that movement starting from the Ægean and reaching, but not strongly affecting, the Western Mediterranean. There, in a great many places, *e.g.* in Southern Italy, in Sicily and in Malta, a southward movement starting from the head of the Adriatic has already fundamentally influenced a probably African layer; this has left little trace because it did not possess pottery, but becomes manifest in the realistic or occasionally even naturalistic manifestations, which in course of time get the upperhand in vase-decoration, etc. The difficulty of ascribing much importance to the Spanish tin for the Ægean Bronze Age is the striking poverty of the Iberian Bronze Age, which contrasts so strongly with the aeneolithic period (Aberg, *Civil. éneolith. dans la péninsule Ibérique*, 164, 169, and Bosch-Gimpera in *Praeh. Zeitschr.*, xv, 118. Important are Scharff's suggestions: *Grundzüge der Aegyptischen Vorgeschichti*, 23 sqq. Both the carinated vase, ("*Kielvase*") and the "*Tulpenbecher*," in which he sees a common possession of Egypt (First Predynastic Civilization), North Africa and Southern Spain, may go back to vessels of esparto-grass. The first-named shape is also typical for neolithic Malta.

CHAPTER V.—THE MIDDLE ÆGEAN PERIOD: HISSARLIK, HYKSOS, AND HITTITES.

The Middle Ægean Period

¶ 19 By the end of the Early Ægean Period, Greece at last possessed a somewhat homogeneous civilization; but the Middle Ægean civilization starts with the disintegration of what limited unity had been created. In a remarkably short period we find a sharp contrast established between Crete and the Greek mainland, while Phylakopi is the unique survivor of the Cycladic civilization; and though more closely related with the continent, it undergoes strong Cretan influences. The other islands are deserted or at least cultural blanks. With them that power had collapsed which had created the unity of the preceding period, a power sprung from the same root as Minoan Crete, and dominating an originally different mainland population. Annihilated now by the finally established monopoly of Hissarlik as the emporium where Western Asia and Europe met, the cement of Greek unity had gone and the mainland fell away at once.

Crete.

With Crete we need not deal at any length in "Studies" which are concerned with the early interrelations of the ancient Near-Eastern cultures. For the magnificent civilization of the Middle Minoan Period is the ripened fruit of those centuries which had passed since the spell of Neolithic times was broken in the east of the island. We have repeatedly emphasized how geographical conditions enabled the rising civilization to take root in Crete and fulfil its slow growth, more intensive than expansive, in thorough peace and independence, while stimuli from outside might favourably influence the development and be assimilated without interfering with the essentially native achievement. The conclusion of this intrinsic growth becomes manifest by the shifting of the cultural centre from the east of the island to Knossos and Phaestos. For all the time that the eastern harbours had been more prominent than any other part of Crete, we may feel certain that the foreign relations which reached the island by their intermediacy were in some way of vital importance. The natural centre for the Cretan civilization however, coincides with its geographical one; for in the fertile plains of Central Crete, near Phaestos and round Knossos, the conditions are favourable for a larger assembly of easily communicating people, essential conditions for the development of a high and differentiated civilization. And when the founding of the Palaces of Knossos, Mallia, and Phaestos signifies that the centre takes the lead, it announces at the same time that the Cretan civilization has emerged fully-grown, self-sufficient and independent from its long incubation. The age of the Palaces, the Middle Minoan Period, is thus fitly distinguished as a new era both from what precedes and, as we shall see, from what follows.[1]

[1] Though the actual Palace at Knossos goes back to Early Minoan I *b*, there are, as well as at Phæstos, signs that the buildings possessed predecessors from the very beginning of the First Middle Minoan Period (Evans, *Place of Minos*, i, 134 sqq., 144), so that there is as little reason to combine Early Minoan III and Middle Minoan I (with M. Glotz, *La Civilization Egéenne*, 25) as to shift the main division on the basis of vase painting only (vide supra, p. 125, n. 1).

Mainland.

Very different is the development on the mainland ; there we find no cultural triumph which crowns what the preceding age has wrought. On the contrary, we shall see that the civilization renounces the Early Helladic tendencies and reverts to an older stage, while over it looms the redoubtable shadow of the Second City at Hissarlik.

Matt-painted wares.

In the Middle Helladic Period the " Urfirnis " ware has disappeared altogether. We have seen that it was an exponent of Cycladic influences which gradually prevailed over immemorial native and more recent Danubian and Tripolje elements, so that the mainland civilization was entirely remodelled on commercial, instead of agricultural, lines. The complete eclipse of " Urfirnis " ware in the Middle Helladic Period shows that not only the Cycladic civilization on the islands had disappeared, but that its counterpart on the mainland equally ceased to exist as such ; it had been absorbed by the older elements over which it had temporarily prevailed. This is shown by the very important fact, put forward in an earlier stage of our research, that the Middle Helladic " Mattmalerei " is a direct descendant from the native red-on-white Neolithic wares of Central Greece.[1] We may refer here to the evidence quoted above, which proves the connection ; as an intermediate stage we have already noted certain B-wares from Phocis and Boeotia.

But now the objection may be raised that there is no continuity between these and the " Mattmalerei," because " Urfirnis " intervenes. This, however, is only partly true. Our material derives from more or less important centres, where indeed the " Urfirnis " finally gained the upper hand ; but because " Urfirnis " ware and older painted ware belonged to two classes of people, sociologically and economically entirely different, we are fully justified in this case in supposing that in the mainly isolated farms and hamlets where the older agriculturists lived together, a " Bauernstil " persisted which was temporarily ousted from the commercial centres, but regained lost ground when the altered conditions had brought the comparatively intrusive commercial civilization to ruin. Again it must be remembered that the pot-painting is only one manifestation of a decorative art which may have affected other industries, the products of which are lost to us. The series of designs which, not only by their abstract geometrical form (triangles, chessboard, etc.), but also by the much more significant fact of their " *syntax* " link up " Chaeronea ware," B-wares outside the Dhimini classes, and " Mattmalerei," would, in themselves, be sufficient to prove our point.

In addition, however, there are other facts. Thus the " patterned Urfirnis ware " of the preceding period was by no means a foreign intruder but, on the contrary, a manifestation of the same ancient " peasant art " which in this case used the new medium (originally meant to be " body-paint " of the whole vessel) to execute *designs* in the old native style. Thus, for instance, the " patterned Urfirnis " from Tiryns and Korakou partly uses designs which are on the one hand preserved in the archaic

[1] Vide supra, ¶ 3.

incised ware found at Olympia,[1] while on the other hand we find there the broad bands of parallel lines known from the red-on-white wares, and its descendants.[2] The same applies to some extent to the white-painted "Urfirnis" ware from Hagia Marina.[3] Thus there cannot be the slightest doubt that the Middle Helladic "Mattmalerei" is a revival of the immemorial native style which, for all we know, was never quite extinct.

Nevertheless, the Early Helladic Period has left its trace here as well. It is true that the "Mattmalerei," as Dr. Blegen's stratigraphical observations show,[4] emerges with a purely rectilinear repertoire from the period of decline, a repertoire therefore not essentially different from that of its Neolithic predecessor. But strangely incongruous amongst the rectilinear motifs are the often-recurring circles, mostly with an inscribed cross, which are strewn on the pots on more or less open panels.[5] Now the appearance of this incongruous design is highly significant, for it shows from which quarter the revival was strongly supported—Melos and Paros, where "Mattmalerei" was the direct descendant of "patterned Urfirnis." For certainly Mr. Edgar's ¶6, which contains ware on which the geometrical designs are executed with a more or less lustrous paint,[6] is so far parallel with the "patterned Urfirnis" on the mainland, that in both cases the new medium, which was meant to be used as body-paint for the whole vessel (in accordance with the ultimate origin of "Urfirnis" as a *slip*), was now used to execute designs. Some of these designs

[1] Compare from Tiryns, Photo Deutsch. Arch. Inst., No. 15612 (tankard), and Blegen, *Korakou*, with *Athen. Mitth.*, 1911, p. 169, fig. 12; 171, fig. 14, pl. v, 8, from Olympia.

[2] Photo Deutsch. Arch. Inst., 15628; another one-handled jug from Tiryns in the Nauplia Museum shows the broad bands of parallel lines in matt paint, but the lower part of the vessel is entirely covered with the dark paint, exactly as is done with the patterned "Urfirnis." Here we have, therefore, actually a transitional style, while also in the Museum at Ægina there are quite a number of sherds intermediate between "patterned Urfirnis" and real "Mattmalerei." But considering the lively intercourse between the sites in the Early Helladic Period, the *absence* of transitional forms on any one given site, or even the absence of patterned ware earlier than "Mattmalerei" (Korakou), or a break in the continuity, as at Orchomenos, where "Urfirnis" intervenes between the red-on-white (and B) wares and "Mattmalerei," is *irrelevant*, and cannot be used as an objection to our explanation, which affects Greece as a whole.

[3] There we get the same "asymmetrie," identical triangles filled in different ways (vide supra, p. 12), and utilization of "overshot" lines (Fimmen, *Kret. Myk. Kultur*, 133, fig. 128, left). As in all vigorous styles, the majority of cases display a few designs which are exactly typical of the local "Urfirnis" ware, and not of any other fabric; but fortunately there are sufficient exceptional instances which give the clue to its relationship to what precedes and to what follows. The few typical and favourite motifs which are used by preference in one locality may change from site to site, and they may take root so firmly in certain places that they persist in successive periods: *e.g.* at Korakou, where fringed narrow bands dominate the "patterned Urfirnis" entirely, recur in "Mattmalerei" (Blegen, *Korakou*, fig. 34, Nos. 3, 6, 11), and even survive in Late Helladic times (ibid., fig. 54), a striking illustration of the existence, at all periods, of local traditions.

[4] Blegen, *Korakou*, 34, cf. pp. 19–30, classes B I and B II.

[5] Blegen, *Korakou*, 21, fig. 28; p. 23, fig. 33; *Ephemeris*, 1895, pl. x, 1, 3, 4 (Ægina).

[6] *Phylakopi*, 96. Mr. Edgar emphasizes the fact that many of the designs survive in the real matt-painted wares of his ¶ 7.

are even common to the mainland, and those two islands[1]; others find parallels in the red-on-polished-buff ware in Syros,[2] or even in Early Minoan III ware in Crete. A third group, however, contains various circular motifs, sometimes still connected by a tangent.[3] They are exactly as in the white-on-black Early Minoan III wares in Eastern Crete,[4] a disintegration product of the spiral belt, or perhaps, more exactly, the "translation" of that essentially rhythmic design into the static vocabulary of the Melian pot-painter.[5]

We have seen that at the very beginning of the Copper Age, when the islands gained importance, they were populated from the surrounding shores. I feel inclined to suggest that Melos, and perhaps Paros, got a good deal of their inhabitants from the original native stock of the Greek mainland; the complete absence of carboniferous wares and of the pure spiral decoration, and also the predominance of painted ware with rectilinear designs in a dark-on-light scheme, point in that direction, and anyhow testify to the absence of Danubian elements in the population. It is also possible that it was already inhabited in Neolithic times, though no Neolithic pottery has been found in the island, and the obsidian appearing in a Neolithic context in Crete and Greece may have been mined in the island by parties arriving periodically from their respective homelands. In any case, when at the end of the Early Ægean Period Melos alone survived the decline of Cycladic civilizations, the relationship with the mainland, which had existed all through the "Urfirnis" period, naturally did not stop, and so it is explicable that the revival represented by mainland "Mattmalerei" possesses some features in common with the Melian and Parian ware.

Significant, firstly, is the appearance of the circle with inscribed cross in the mainland "Mattmalerei" which has no antecedents there at all; also certain pot-shapes, *e.g.* bowls[6] and store-jars,[7] which have neither of them mainland ante-

[1] *Phylakopi*, pl. vii, 14; viii, 4, and *Athen. Mitth.*, xxxxii, p. 64, fig. 71, are closely related with a vessel from Tiryns, Photo Deutsch. Arch. Inst., 13014.

[2] Ibid., pl. viii, 3; cf. *Ephemeris*, 1899, pl. ix, 5, 7, 8.

[3] *Phylakopi*, pl. viii, 9, 12.

[4] Ibid., pl. vii, 1 (concentric circles), 7, 8, 12 (compare Boyd-Hawes, *Gournia*, fig. 42, No. 4, for a less disintegrated state, and *Phylakopi*, pl., vii, 9, for the next stage); pl. x, 18, 19. Further, cf. *Athen. Mitth.*, xxxxii, p. 62, fig. 68, 69.

[5] Vide supra, p. 117, with nn. 3–5. There is obviously no connection between Melos and Crete in the matter; in both cases the spiral belt desintegrates under the influence of the same factor, *i.e.*, the uncongenial mentality of the potter, and similar results ensue.

[6] The typical Melian bowl with one lug vertically pierced, *Phylakopi*, pl. xxxviii, 3 (an early shape) recurs similarly with only the rim decorated at Korakou (Blegen, loc. cit., fig. 30), at Argos *B.C.H.*, 1906, pp. 22, sq., figs. 29, 30), at Hagia Marina (Chaeronea Museum) and with two lugs at Ægina (*Ephemeris*, 1895, pl. x, No. 7), and at Aphidna (*Athen. Mitth.*, 1896, pl. xv, 4–6).

[7] E.g. *Phylakopi*, pl. vii, 14*a*, 5; viii, 4. I here confine myself to shapes occurring in the early (so-called "geometric") ware at Phylakopi, which may have influenced the rise of the "Mattmalerei" on the mainland. Others like the "breasted" beak-spouted jars and various cups (Blegen, *Korakou*, 25–30) are all so advanced Middle Cycladic, that their appearance on the mainland may be due to later contacts. The shapes, however, quoted in this and the foregoing note are inseparable from the "Mattmale ei" from its very beginning.

cedents. But it must be repeated that this Melian and perhaps Parian influence is not sufficient to account for the "Mattmalerei," because it does not explain the series of motifs discussed above, which, in their peculiar *syntax*, can only be understood on the assumption of a revival of a native "Bauernstil" in Central Greece.

It is very interesting to note that in the second half of the Middle Helladic Period the running spiral belt is borrowed in its integrity by the mainland potters,[1] and so appears in the "Mattmalerei" later than the circle designs which are to be understood as its disintegration products. This proves again what we have already stated before—that we have to postulate the *permanent* existence of a coherent series of objects in some material that is lost to us (embroidery or goldwork) where the spiral belt was used since the great migration brought it to the south from the Danubian region; and from this coherent series it was, from time to time, introduced into the pot-painters' repertoire. It is perhaps not superfluous to insist again that the spirals of Dr. Blegen's second class of matt-painted ware cannot have been derived from Crete because there the spiral belt in its pure and severely geometrical form was never adopted at all before Late Minoan times.[2] Significantly enough, the later Middle Helladic spiral is identical with the particular one known from Butmir, Transylvania, and some "frying-pans" which can only be explained as derived from *appliqué* thread or wire.[3]

Minyan ware. We now have to consider another peculiar kind of pot-fabric which is equally distinctive of the Middle Helladic Period. With the "Mattmalerei" appears from the beginning the so-called grey "Minyan ware," which is still considered to present an unsolved riddle. It seems to have no antecedents in Greece, while its distribution[4] shows that it can neither have come from the north nor from oversea. This last view was held by Mr. Forsdyke, who, in a most able and careful study of the material then available, came to the conclusion that the origin of Minyan ware was to be found at Hissarlik.[5] Mr. Childe, however, utilizing the discoveries of M. Sotiriades in Phocis showed conclusively[6] that this opinion could not be maintained. He insisted, firstly, on the fact that Minyan ware is found in Greece centuries

[1] Blegen, *Korakou*, fig. 35; fig. 36, Nos. 12, 15; fig. 47, Nos. 2, 5, pl. ii, 1, 2. A similar vase from Tiryns is in the Nauplia Museum, and also similar sherds from Mycenæ.

[2] It is possible that the Cretan influence acted in a general way through the medium of Melos, the mainland connections of which are proved by the ample occurrence of Minyan ware on the island. The gradual displacement of rectilinear by curvilinear designs on the Melian ceramics may have influenced the mainland potters, who in their attempt to keep up to date now introduced the spiral belt, continuously popular in other mainland industries, the products of which are lost to us. We have found this to be the case in Crete in Early Minoan III. For our present instance, a gold jug from Mycenæ (Bossert[2], fig. 278), somewhat later than the "Mattmalerei" is another instance of the persistence of the spiral-design in gold-work.

[3] *Vide supra*, p. 27, with n. 1.

[4] *Journ. Hell. Studies*, 1914, p. 128.

[5] "The Pottery called Minyan Ware," *Journ. Hell. Stud.*, 1914, 126 sqq.

[6] On the date and origin of "Minyan ware." See *Journ. Hell. Stud.*, 1915, p. 196 sqq.

before it appears in Asia, where it is found in the Sixth City of Hissarlik together with Ægean imports, the earliest of which are Late Minoan II. In fact we may state already here that unfortunately Mr. Forsdyke has been led astray by introducing the actual occurrence of Minyan ware at Hissarlik into the problem of its origin.

Further, Mr. Childe insisted rightly on the fact that while Minyan ware is found everywhere else exclusively in the shape of small drinking vessels, it appears in Phocis in all kinds of shapes, including ordinary household ware.[1] Rightly he concluded that Phocis must have been the region where it originated, a view not only supported by its distribution, which becomes more and more rare as we go north from the Kephissos valley, but also by the fact which we discussed before—that the Danubian immigrants were particularly numerous and flourishing in Phocis and Boeotia. For in the black carboniferous wares which these people produced we have at least some of the antecedents for the production of Minyan ware, *i.e.* the firing in a smoky fire and thus a reducing atmosphere.[2]

It is quite obvious that Minyan ware cannot have developed out of black carboniferous ware in a "natural" way, *i.e.* a way determined by factors inherent in the technique itself. But the result might be reached if experiments were undertaken. Now the Minyan ware arises in surroundings where ceramic experiments are to be expected. We find, as we have seen, previous to the arrival of "Urfirnis" in Boeotia, existing side by side on the one hand painted red-on-white wares and their descendants, all fired in a neutral or oxidizing atmosphere, and on the other hand black carboniferous wares—a concurrent use therefore of two techniques, which proceed by entirely different means to opposite ends. And it is the more likely that experiments were undertaken if we realize that Minyan ware is wheel-made and therefore industrialized, and that M. Van Gennep has, with numerous ethnological instances, shown in his excellent study on Kabyle pottery that while

[1] *Journ. Hell. Studies,* loc. cii., fig. 1, p. 197.

[2] Mr. Forsdyke has well elucidated the technique of the Minyan ware (loc. cit., 137 sqq., especially 140). The pottery is fired at a good temperature, and then the furnace is "muffled," *i.e.* the fire holes are closed; consequently, the imperfect combustion produces smoke (which is not essential) and also reducing gasses, which act on the red ferric oxide of the clay and reduce it to black ferrous oxide. Thus, the grey colour of the Minyan ware is produced entirely by chemical means, notwithstanding the heavy smoke which is developed in the process. The contrast with black carboniferous wares is, of course, that in the production of the latter the fire is smoky from the beginning, and so carbonacious matter penetrates into the porous clay, while the highly fired Minyan ware is already fully "baked" and hard when the furnace is muffled; moreover, in the black carboniferous wares the shiny black polish is produced by polishing the sooty surface of the vessel after the fire has slowly died out; they were, of course, baked in a simple open fire. But we have an entirely different case with the kiln-fired Minyan ware; it is probable that the modern parallel of the "Staffordshire blue brick" production holds good in all main points, and that at the very end of the firing the furnace was thrown open so that the air entered, while the pots were no longer so hot as to admit of an oxidation of the ferrous oxide, but were still hot enough to have the deposit of soot burned off.

hand-made pottery is woman's product, wheel-made ware is made by men, "les vrais facteurs du progrès."[1]

Finally, a feature of the Minyan ware itself shows it to be the outcome of deliberate experiments undertaken with a clearly defined purpose: the imitation of silver vessels. We have seen[2] how remarkably rich in silver the Early Ægean Period must have been, considering the number of silver objects which escaped being looted through the ages and have come down to us. The Minyan ware does not only suggest metal vessels by its shapes, but its texture and general appearance also are the nearest approach to an imitation of silver for which a potter may hope.

But now it is also clear why Minyan ware appears everywhere outside Phocis exclusively in the shape of goblets and cups; such drinking vessels, but no other ware, and certainly not household pottery, were supposed to be of the noble metal.[3] In the time of high prosperity when commerce flourished in Greece, the Early Helladic Period, we have found a strong dependence of the shapes of vessels both of pottery and metal on those of Anatolia. With the rise of Hissarlik there is no doubt that this city set the fashions, especially in the case of metal vessels, with which, no doubt, it provided the Ægean to a large extent. And thus we may understand the fact rightly observed by Mr. Forsdyke, that the shapes of Minyan ware belong to the *family* of Trojan pot-shapes; but they are not identical, and the most striking parallels[4] belong to the Second City (partly even to its earlier parts), exactly where we would expect them. If these high-handled cups, these goblets and tankards from Hissarlik, differ from the Minyan shapes, it is in their purely ceramic non-metallic character, with often more gradual transitions in their forms and absence of flat-ribbon handles. But these features are excellently in keeping with the general fact, which we observed before,[5] namely, that at

[1] Van Gennep, "Etudes d'Ethnographie Algérienne: La Poterie Kabyle," in *Revue d'Ethnographie et de Sociologie*, 1911, sqq. An extremely interesting article full of elucidating information. I only quote, excluding the information of ancient writers, the facts that in the whole of South America, in the Nicobars, Philippines, Perak, former German East Africa, and Nubia, the hand-made pottery is made by *women*. Of 76 tribes in the Belgian Congo there are only 10 where men are potters, and then the pottery is either wheel-made, or the craft is industrialized so that there is a "master-potter" using labourers of both sexes, or the potter is (as the smith) a sorcerer. "Dans ces conditions il est impossible que le plateau dont se servent les femmes donne normalement naissance au tour dont se servent les hommes." This apparently simple change implies in reality "une véritable révolution dans les mœurs," because of reasons "d'ordre traditionel, sexuel et psychologique." This also explains the long concurrent existence of hand-made and wheel-made pottery in certain parts, already observed by Prof. Myres, *Journ. Roy. Anthrop. Inst.*, 1902, p. 248, and *Man*, 1901, No. 83. But as soon as industrialization is effected, men take control of the manufacture.

[2] *Vide supra*, p. 87 sq.

[3] Among the earliest silver finds in the Cyclades are even two silver goblets (*Athen. Mitth.*, 1886, 24 and pl. i, 4).

[4] *Katalog. Schliemann Sammlg*, Nos. 691–755, all of the second "period" of technique: see further 1219; see, for Minyan parallels, Forsdyke, loc. cit., 132 sqq.

[5] *Vide supra*, p. 66.

Troy, pottery as a whole was a low-grade product, in the sense that the sphere in which it was used was so far below that in which metal vessels appeared that even imitations of the latter are entirely absent. Shapes, however, are primarily dependent on use, and thus we are fully entitled to claim for Hissarlik the existence of metal drinking vessels *similar* in shape, but not identical, with those we have in pottery, which do not imitate the former. And those metal drinking vessels of Hissarlik would then have been the prototypes of the Minyan ware. A few surviving metal vessels confirm in fact the foregoing argument.[1]

Hissarlik and Greece.

But the monopolization of the Asiatic trade with Central Europe and the shifting of the commercial centre to Troy not only undermined the position of the Cyclades as intermediaries, but thereby also destroyed the possibilities of greater wealth for the Greek mainland. For except Melos with its obsidian the country did not possess any natural wealth, and only when the Cyclades were thickly populated trade stations, can the natural products which the mainland produced, and which were wanted to sustain so large a population on such barren islands, have had commercial value. The rise of Troy, therefore, not only destroyed Cycladic transit trade, but reduced almost to nothing the possibilities which the mainlanders possessed of exchanging goods for their natural products. The material standard of life must have gone down considerably, and it is quite probable that the period of commercial prosperity had produced an excess of population, which perhaps could only be reduced to the number suited to the new conditions, by a period of hardship and want.

Anyhow, the decline of the Helladic–Cycladic commerce is exemplified by the disappearance of "Urfirnis" ware, while the revival of the old painted ware, with geometrical designs in the "Mattmalerei," testifies the return of older and rural conditions; in the Minyan ware a peculiar product was evolved to replace the now

[1] They have been already adduced by Mr. Forsdyke, and show, indeed, how the shapes, because they are dependent on the actual use to be made of the vessel, may remain the same in essentials while the material and decoration is much more subject to fashion. There is a gold goblet from Mycenæ (Schliemann, *Mykenæ*, No. 343) already by its discoverer rightly compared to a pottery vessel of Hissarlik I, which is therefore about 1,500 years older. This gold goblet is of a comparatively simple technique. But from the fourth shaft-grave comes another goblet (Schliemann, loc. cit., No. 348; Bossert, loc. cit., fig. 285), which represents the state of technical refinement reached at the time of interment. Once again we find metal objects of typologically widely different "age" proved by the circumstances of the finding to have been used side by side. A contemporaneous Mycenæan vessel (Schliemann, loc. cit., No. 344; Bossert, 286) takes a place in between those two types. Yet another (Schliemann, loc. cit., No. 339; Bossert, loc. cit., fig. 279) is, as Mr. Forsdyke remarks, the very prototype of certain Minyan vessels, and must, therefore, have been in existence a good deal earlier than the Mycenæan civilization. In Crete, again we find evidence, in the shape of one silver vessel from Gournia and a number of pottery imitations (Evans, *Palace of Minos* i, 139) of what the particularly fashionable shape of this two-handled type was in the Middle Minoan Age. Others (lastly Evans, *Palace of Minos*, i, fig. 183) continue a type which must have been in use already in the preceding period, judging by their pottery imitations. Thus, we find an almost continuous persistence of a few main types locally and at various periods elaborated according to passing fashions.

unobtainable metal vessels which had become indispensable to every self-respecting pre-Hellene.

The origin of Minyan ware in Phocis and Boeotia is, therefore, not only explicable from the antecedents of local ceramic technique—while there is no way leading from Urfirnis to Minyan, there is such a way from black carboniferous wares—but also from geographical considerations ; for at Orchomenos, as we have seen, two important routes joined, before going to the north : that from the Ægean via Argolis and Corinth, and that from Asia via Chalkis. On this last route the rise of Hissarlik on the Asiatic side is illustrated by an increase of objects which are imports or direct imitations of vessels from the great emporium.[1] There it may well be that metal vessels from the same quarter entered mainland Greece to be further distributed ; and so we are not altogether surprised to find the potters from the same region again succeeding in producing an imitation of these same vessels as soon as the conditions had changed to such an extent that the originals could no longer be obtained, and the demand for substitutes increased. While the cups and goblets are thus evidently the articles for export, it need not astonish us that in its homeland Minyan ware was used for all kinds of pottery ; but it is significant that one of these rare Phocian shapes finds a parallel in contemporary Crete, which points clearly back to a *metal* prototype again.[2]

The development outlined above would prepare one to expect a gradual transition from the Early to the Middle Ægean Age. In Crete and Melos this is admittedly the case ; on the mainland, certain sites like Hagia Marina give similar evidence. On others we find more or less clear signs of disturbances and violence at the close of the Early Helladic Period. There is no reason to generalize on the basis of these observations ; for periods of economic decline cause unrest and disturbance, and sometimes, as at Korakou, where a layer of ashes attests a sudden and general conflagration, there may only have been a local catastrophe. For while in prosperous times several

[1] Childe, loc. cit., 204 sq. There are especially in the Euboean tombs many vessels, the closest parallels of which are at Hissarlik ; the same may be said of some mugs from Syros (*Ephemeris*, 1899, pl. ix, 7, 11). On the other side we find at Hissarlik, Cycladic vessels like a Melian "duck-vase" (*Katalog Schliemann Sammlg.*, No. 2066, in reality a type of *askos*, as Max Mayer, *Jahrbuch Deutsch. Arch. Inst.*, 1909, pp. 207 sqq., has shown) and sherds with impressed concentric circles (ibid. 2412), and also, as Mr. Childe has already assumed, the painted pyxis (ibid., No. 1739). It is, of course, useless to apply the classification according to technical characteristics which Poppelreuter and Schmidt have worked out for the native wares, on imported vessels. These must simply remain undated, in the absence of stratigraphical evidence. To all these examples may be added the particular kind of spreading "beak-spout," which is in the Ægean almost exclusively found in Euboea and at Hagia Marina, and is in Asia Minor typical of Mysia (Yortan, Troad), and also at Drachmani of a neckpiece like that of Schliemann, *Slg.*, No. 2297, decorated with cross-hatched triangles in reddish brown lustrous paint, while an exactly similar piece in real "Mattmalerei" is in the Ægina Museum, and once more confirms the relationship of the earlier and later technique.

[2] *Journ. Hell. Studies*, 1915, p. 197, bottom row, and Evans, *Palace of Minos*, i, fig. 140.

1 2

3 4

EARLY HITTITE POTTERY FROM CAPPADOCIA. Scale 1 : 5.

1 and 2. Black on red; 3. Black on buff; 4. Orange buff, with black design on chalky white background.

centres could flourish side by side, now the crushing competition of Hissarlik II in the European trade, the depopulation of the Cyclades, and the consequent decrease in demand for raw material from the mainland, all these factors may have led to desperate attempts of burghers from one trading centre to save their waning prosperity by the devastation of a neighbour. The origin of the Minyan ware now being localized in Phocis, it is also impossible to ascribe the changes on the mainland to a sudden "invasion," that much-misused argument. That Minyan ware itself appears suddenly, and in great quantity, is well in keeping with its character as a mass-product; once invented, it certainly was meant and was fit to be spread quickly and in numbers.

Chronology.

It may already have become clear through the foregoing account of the Middle Ægean Period, that it stands as a main period on an equal footing beside the Early Ægean Age. Nevertheless, it may be worth while to consider its beginning in more detail and face the various chronological problems which then arise. We have obviously to reckon with a period of transition, and it is therefore only natural, and involving no collision with the accepted Cretan chronology, that it should be often difficult to say whether a certain vessel belongs to Early Minoan III or Middle Minoan I*a*.[1] We have seen that the Age of the Palaces, which begins in Crete with Middle Minoan I*a* is, indeed, an essentially new era.[2] On the Cyclades the same seems to be the case. Phylakopi I and II show a definite break in the architectural, but not so much in the ceramic evidence. Nevertheless, one sees that the "geometric ware with lustrous paint," *i.e.* the equivalent of "patterned Urfirnis," belongs to the First City, and the real "Mattmalerei" to the Second.[3] The First City would thus fall entirely within the Early Ægean, and the Second in the Middle Ægean Period. This is confirmed by the appearance, in the Second City of "Kamares" and Minyan ware,[4] characteristic of the Middle Ægean Period in Crete and on the mainland respectively.

The other Cyclades have been by this time practically deserted. Shepherds and peasants may have remained wherever the rocks allowed some scanty vegetation; and we find on Syros an isolated tomb-group of the Middle Helladic Period.[5] The

[1] We may well agree with Sir Arthur Evans (*Palace of Minos*, i, 111) that the polychromy just starts within the limits of the Early Minoan Period, in its very simple form of straight bands of red bordered by black or vice-versa. As such it appears on a vessel from Naxos (*Congrès d'Arch. Athens*, 1905, loc. cit.), which cannot be later than Early Cycladic III. In the Middle Cycladic Period the island was apparently not inhabited to any considerable extent. (*Vide supra*, p. 118 sq.).

[2] *Vide supra*, p. 136.

[3] There are Mr. Edgar's ¶6 and ¶7, already separated in this way by Wace and Blegen, *Ann. Brit. School Athens*, xxii, 186 sq. See also *Phylakopi*, 103, 258. From these accounts, written before any preconceived ideas could be suspected to mar, even subconsciously, the rendering of the evidence, it is quite clear that within the continuous development of the Melian ceramics the transition from one main period to the other left the faint trace which we have acknowledged in the text.

[4] *Ann. Brit. School Athens*, xvii, 9 sqq.; 16 sqq.

[5] *Ephemeris*, 1988, pl. ix, 6, 24, 27.

recently published results of the German excavations on the Acropolis of Paros reveal the fact that the settlement there is contemporaneous with Phylakopi I, as Rubensohn has convincingly shown.[1] The presence of a few rare Minyan vessels proves that the complete desertion of the site was postponed for some time after its prosperity had passed away.

Dr. Blegen and Mr. Wace suggest tentatively that the end of the Early Helladic Period (E.H. III) would coincide with the end of the First Middle Minoan Period.[2] If this were so one would have no right to claim the existence of main periods (Early and Middle Ægean) to be valid for the whole pre-Hellenic civilization of Greece. However, it seems that the assumption is based exclusively on the fact that Minyan ware, which appears at the beginning of the Middle Helladic Period, is found at Phylakopi with Kamares ware which belongs to Middle Minoan II. Consequently, what precedes in both regions has to be contemporaneous, and so Early Helladic III is synchronized with Middle Minoan I. Here, however, these scholars have been deceived by abstractions. For certainly "Kamares ware," in its proper sense, means the polychrome Cretan pottery at the height of its beauty, in Middle Minoan II. But the only difference between Middle Minoan I and Middle Minoan II pottery is merely the rich stylistic development of the later period which, moreover, is not common to Crete as a whole; for in the East, now reduced to mere countryside, the earlier simplicity remained all through the Middle Minoan Age, without ever reaching the height of the royal pottery studios at Knossos and Phaestos.[3] And if the excavators at Phylakopi state that they find "Kamares" ware, it is absolutely impossible to derive from that statement, based on sherds where neither composition nor design can be judged, any certainty at all that they have handled Middle Minoan II and not Middle Minoan I ware, for there is no technical criterion, and the style escapes judgment. There is, therefore, no reason to let Early Helladic III overlap with Middle Minoan I. On the contrary, the evidence from Paros shows that Minyan ware appears in a context, of which the latest elements are still contemporaneous with the very beginning of Phylakopi II.

The change from Early to Middle Ægean is thus at the same time noticeable over a large area, a certain sign that changes of great historical importance are actually recognized if we put here the distinction between the two main periods.[4]

[1] *Athen. Mitth.*, xxxxii, 1 sqq.; especially 89 sqq.

[2] Blegen, *Korakou*, 121, 122.

[3] Evans, *Palace of Minos*, i, 237.

[4] It is worth noting that in the Middle Ægean Period again the subdivision into three is rather the exception than the rule. At Knossos, and perhaps at Phaestos, it works well, but in Eastern Crete Middle Minoan I develops straight into Middle Minoan III without intermediate culmination in an "earlier palace-style." On the mainland Dr. Blegen distinguishes two Middle Helladic Periods only. At Phylakopi it is only possible to distinguish, within the continuous development, an earlier period in which rectilinear designs prevail, and a later one with Cretan influences predominating.

¶ 20. We have seen that the factors which determined the differences between the Early and Middle Ægean Periods are numerous and manifold. Nevertheless, one amongst them stands out as particularly powerful: the rise of Hissarlik II. *The Power of Hissarlik.*

From the beginning the city on the Hellespont may be supposed to have derived its wealth largely from the metal trade; but it seems no mere coincidence that its most glorious stage, exemplified by the impressive amplification of the third structural period, belongs to the Bronze Age; the prosperity of Hissarlik II and the diffusion, if not the invention, of the new standard alloy with about 10 per cent. tin[1] seem clearly to stand in a causal relation.

In the Asiatic expansion towards the West, which marks the beginning of the Early Ægean Period, Hissarlik, as we have seen, seems to play no part at all, and it is the South-Western part of Anatolia which prevails[2]; but it may be that the frequent occurrence of silver, already in that early period, cannot be sufficiently accounted for by the deposits of ore on Siphnos alone. However, the prosperity of Hissarlik, as, in fact, of all its successors on the Dardanelles and Golden Horn, was not dependent on trade with the Ægean, but on its central position between Europe and the regions to the east and south of the Black Sea.[3] Our earlier researches on the relative chronology of the Southern Mesopotamian civilizations have enabled us to state that the Copper Age started earlier in Susa than either in Egypt, the Ægean or Anatolia.[4] Prof. Rostovtzeff, on the other hand, has repeatedly drawn attention to the astounding wealth of metal in the Caucasian regions at very early times, and figures a gold diadem closely resembling the gold flowers from Mochlos.[5] Classical tradition also is unanimous in ascribing to these same regions exceptional metallurgical knowledge of immemorial antiquity.[6] Here in the hardly explored regions of Armenia or Transcaucasia may well be found the centre from which the knowledge of metal-working spread. As to Europe, we have seen already that metal appears earlier and more plentifully in those parts which are nearer to, or more easily accessible from, *Eastern centre of metallurgy.*

[1] Nine to ten per cent. tin is most common in the analysis, but for the different percentages wanted for various uses see Gowland, *The Metals in Antiquity*, 243.

[2] *Vide supra*, p. 99; 119.

[3] This is most convincingly shown by Dr. Walter Leaf, especially in *Ann. Brit. School Athens*, xviii, 301 sqq. Of course the particular parasitical existence of Priam's City, dependent on toll-taking and not on actual trade, as put forward in *Homer and History*, passim, reflects more particularly the age of the "sea raiders," and cannot be generalized for later or earlier periods.

[4] *Vide supra*, p. 7; 102, n. 2.

[5] *Iranians and Greeks in Southern Russia*, 18 sqq.; and *Revue Archéologique*, 1920, ii, 1 sqq., with pl. iv, 6 (cf. Seager, *Mochlos*, fig. 41). I do not hold with Professor Rostovtzeff that we may use the stylistic similarities between the Early Sumerian, Proto-Dynastic and Maikop objects as an argument to establish the hypothesis that they are contemporaneous because the effect of contact and independent development is too complicated to be met by such simple solutions. But Professor Rostovtzeff has shown, in comparing the Maikop finds with those from Hissarlik, that they are typologically older than anything known in the West. (*Iranians and Greeks*, etc., p. 30 sq.).

[6] Summarised by M. Hubert, in *Syria*, 1925, 27 sqq.

Asia.[1] But more striking still are the facts revealed by a study of the *types* of tools and weapons of the Early Metal Age ; all along the Middle and Upper Danube occur daggers, pins, needles, of Anatolian and " Cypriote " types ; a peculiar type of ear-pendant, the " Hänge-spirale " of Hubert Schmidt, who was the first to study its development, occurs in its earliest form at Hissarlik and flourishes in Central Europe ;[2] significantly enough it appears in the" first original Bronze Age civilization in Europe " in a more complicated form known in its richest elaboration from " Priam's treasure."[3] But these striking phenomena are only seen in their proper perspective if we notice that most of the types, common to Central Europe and Hissarlik, are also found in the Caucasus region, while they are absent, rare, or late in the regions north of the Euxine and on the Lower Danube.[4]

M. Hubert[5] has remarked already that while Bohemia is rich in tin and lacks copper, the Caucasus, on the other hand, possesses a wealth of copper but lacks tin. Does not this consideration, in conjunction with the typological facts just emphasized, explain entirely the astounding prosperity of Hissarlik II, 3, for which the use of the standard alloy unknown in the Early Ægean Period, is testified ? If Hissarlik was neither the producer of raw materials nor the main industrial centre of early metal trade, it was the world market where the raw material and finished products were bought and sold.

In the Early Copper Age, some metal implements must have occasionally found their way through the South Russian steppes ; for they are found, together with other signs of intercourse, with the East and noticeably with the Caucasus in the

[1] *Vide supra*, pp. 33 sqq.

[2] *Zeitschr. f. Ethnol.*, 1904, 608 sqq. The author notices that the earliest type is found at Troy (p. 623, " als Ausgangstypus ist die Trojanische Form zu betrachten : . . . sie wird fuer die Entwicklung der spezifisch Ungarische Typen vorausgesetzt "), but then postulates that this type *really* originated in Transylvania, merely because it flourished there later on (p. 616, " Hier haben diese Formen ihre Entwicklung erlebt, hier werden wir also auch ihren Ursprung zu suchen haben "), and after having placed " X(?) Ungarische frueheste Bronzezeit," as preceding the earliest type actually found at Hissarlik, proclaims that he has proved its European origin ! (p. 624, " Fuer die Vormykenischen perioden weisen unsere Hängspirale also [sic ! H.F.] auf Nord-Südliche Kulturströmungen).

It is interesting to note that in one and the same tomb-group (Childe, *Dawn of European Civilization*, 197) occur side by side " Hängespirale " of the most elaborate *and* of the " earliest " type (ibid., fig. 95, Nos. 1 and 2), another instance which proves how unfit typologically classified objects of costly material are to be used as dating evidence ! It may be noted though that some " Hängespirale " of the simplest type are found in a tumulus of the earliest Bronze Age (Middle Helladic I) at Chaeronea (*Ephemeris*, 1908, 94, fig. 16).

[3] In the Aunjetitz culture (compare Childe, *Dawn of European Civilization*, fig. 29, 1, with fig. 89, 4, 5).

[4] Rostovtzeff, *Iranians and Greeks in Southern Russia*, 17 sq., describes how the Southern Russian steppes rather isolated the Caucasian regions from those of Central Europe.

[5] *Syria*, 1925, p. 25, n. 1. M. Hubert quotes Schranil, who concludes, from the occurrence in the Bohemian Bronze Age of groups of torques of Caucasian types consisting almost of pure copper, that they represented the form (like the " lead-pigs " and the " double-axes " of copper) under which copper was imported into Bohemia.

earliest phase of the Tripolje culture in the Government of Kiev.[1] But curiously enough, they are lacking completely in the second phase as we have seen. Now we know that at Cucuteni this second phase contained Minyan ware[2] and, therefore, was conceivably contemporaneous with the Middle Ægean Period, when, according to our previous conclusions, the metal trade with the East seemed concentrated in Hissarlik II. The absence of metal in the later stage of the Tripolje Culture in Russia is the northern counterpart of the decline of the Cyclades after the Early Ægean Period, and thus our assumption explains well what otherwise would be an anomaly.

Egypt.

The Egyptian, Mesopotamian, and Cycladic evidence confirms our view most strikingly. In Egypt, we find already in the 1st Dynasty copper hardened by a small percentage of arsenic, more rarely bismuth.[3] But situated far from the East to West route of the bronze traffic, it only acquired the new tin alloy when in the Hyksos Period the country was permeated by Asiatic influences. Interesting evidence from the preceding period shows, however, that the metal industry of the Middle Kingdom obtained, in all probability, some of its copper and silver from the important source of supply in the Middle East. At Kahun, in the town of the labourers who worked at the pyramid of Sesostris II, a copper torque of the Caucasian type was found.[4] In my excavations at Abydos for the Egypt Exploration Society, I found a silver torque of the same type round the neck of a woman who was certainly buried in the XIIth Dynasty. And in a deposit probably buried under the Middle Kingdom in the Egyptian temple at Byblos,[5] a number of torques and eyelet-

[1] *Vide supra*, p. 34, n. 10.

[2] *Jahrbuch Deutsch. Arch. Inst.*, 1925, 353.

[3] Petrie, *Arts and Crafts*, 100. I do not want to suggest that here we have to do with the thoroughly thought-out production of an alloy. It is rather to be assumed that impurities in the ore were utilized, when experiments showed that better products were maintained with certain deposits (containing the impurities) than with others.

[4] Petrie, *Illahun, Kahun, and Gurob*, pl. xiii, 18. The torques from Byblos and Abydos make it impossible to see in it, with Childe, *Dawn of European Civilization*, p. 190, an importation from Hungary; not a single sign of such intercourse exists in Egypt.

[5] *Comptes Rendus del'Acad. des Inscr.*, 1923, 84 sqq., especially 90 sqq. It is somewhat difficult to date this deposit as long as it is not fully published. Scarabs of carnelian and quartz, as indicated in the Report, can hardly be of the Hyksos Period, and as the so-called Hyksos scarabs gradually develop out of Middle Kingdom types, we cannot say, unless they are published, whether they are not XIIth Dynasty scarabs with a scroll pattern. Some of them are of bone, and, therefore, not Egyptian, but local Asiatic imitations. That implies that they may be "blundered" and thus very similar to real Hyksos scarabs, but of an earlier date, a thing we might almost expect at Byblos, which was so closely in contact with Egypt during the XIIth Dynasty. Small statuettes, like those described in the Report (p. 92) also suggest the well-known "genre-Bilder" of the Middle Kingdom. All these objects would be inexplicable if one accepted the alternate date for the deposit, *i.e.* the post-Hyksos Period, in which case it would be a "cache," where some Asiatic returning from Egypt, had hidden his loot. For there is, of course, no possibility that real "Hyksos" scarabs would be earlier in Syria than in Egypt (Hubert, loc. cit., 17): they are essentially Egyptian objects, made *in* Egypt, under the influence of, or actually by foreigners who disfigured the traditional schemes of the late Middle Kingdom.

pins were found, which M. Hubert has convincingly shown to belong to the Caucasian family.[1] Moreover, we find in the famous tombs at Byblos alongside the presents which the local ruler received from Amenemhat III and IV, and other objects which are of Ægean origin, bronze prongs which can only be paralleled at Astrabad and Tzarewskaja, north of the Caucasus.[2] Another torque, broken, and an axe, "of Hungarian type," were found in a North Syrian grave at Hammam by Mr. Woolley, who dates it to the Transition Period, which is contemporaneous with the late Middle Kingdom in Egypt.[3]

Mesopotamia. In Mesopotamia copper was not only known at a very early date, but it was also used very extensively even, as Dr. Hall's excavations at Ur have first shown, for large sculptures.[4] Most important is the fact that the earliest copper tools again show similarities with the finds north and south of the Caucasus, thus adding to the probability that metallurgy spread from there;[5] the famous treasure of Astrabad, and perhaps also the finds from Maikop, show, on the other hand, the reflex influence from the Sumerian cultural centre on those northern regions.[6] Significantly enough, however, the tin-alloy bronze is unknown, though already before Sargon a lead antimony and copper alloy, which was called bronze, was used.[7]

Greece and Crete. In Greece, we know that bronze was absent in the Early Ægean, and universally used in the Middle Ægean Period.[8] Though here it is certain that other means of hardening the metal, *e.g.* arsenic, were used in the earlier period,[9] the real bronze

[1] *Revue, Syria*, 1925, 16 sqq. The material from the Caucasus is extremely difficult to deal with, as tomb-groups are mostly not distinguished, and excavations and publications are equally inadequate. But we may agree with M. Hubert, that "ce qui est en question c'est la date de certaines formes nouvelles et non pas la présence du fer dans certains milieux archéologiques dont l'homogénéité peut être douteuse." M. Hubert has shown that the types belong to the Caucasus; their date, or at least a date *ante quem*, is fixed by the finds in Egyptian and Syrian groups here discussed. Evidence of the existence of a very important centre of metallurgy in the Caucasus regions at still earlier times is, on the one hand, that adduced by Professor Rostovtzeff (vide supra, p. 147, n. 5), and, on the other, by evidence from Sumerian sources.

[2] Clermont, Ganneau and others: *Les Travaux en Syrie de* 1920 *à* 1922, p. 21, fig. 3; cf. *Journ. Egypt. Arch.*, vi, 6 sqq., pl. iii.

[3] *Liverpool Annals*, vi, pl. xxi, *c*.

[4] See *Man*, 1925, No. 1; *Journ. Egypt. Arch.*, ix, 177 sqq.; and *The Antiquaries' Journ.*, 1924, 329 sqq.

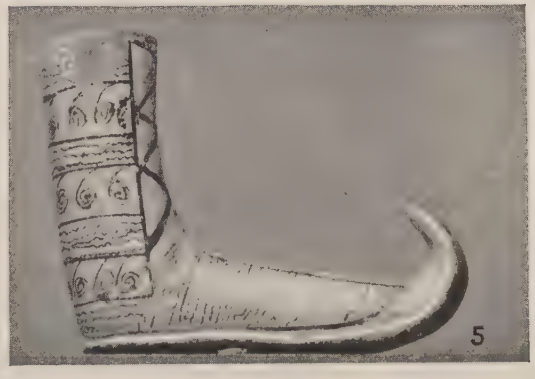
[5] See Childe, *Dawn of European Civilization*, p. 146, 149 sq.; see also Tallgren, in *Zeitschr. der Finnischen Altertumsgesellsch.* ("Suomen Muinaismuistoyhdistyksen Aikakaushirja"), xxv, p. 204, on the Caucasian affinities of Persian finds.

[6] Rostovtzeff, in *Journ. of Egypt. Arch.*, vi, 4 sq.; Frankfort, "Studies," I, p. 85.

[7] Meiszner, *Babylonie und Assyrien*, i, 265.

[8] For analyses, see *Comptes Rendus Congrès. Intern. Arch. Athènes*, 1905, p. 266 sq. *Mélanges Nicole, Genève*, 1905, 603 sqq.; *Revue des Etudes Grecques*, 1912, p. 276; *Bull. des Corresp. Hell.*, 1906, 40; *Journ. Roy. Anthrop. Inst.*, 1897, pp. 314 sqq.; and, with some reservation, Mosso, *Le origine*, etc., 234 sqq.

[9] M. Zeghelis in *Mélanges Nicole*, p. 606 sq. A saw from Naxos. The actual advantage of bronze is, of course, its better malleability, and consequent advantage for casting. *Vide supra*, p. 6, n. 1.



HITTITE POTTERY FROM CAPPADOCIA. Scale 1 : 4.

1, 2, 3, 7. Black on buff; 5. Black on chalky white slip; 6. Red polished pottery with chalky white background under black design;

appears with the rise of Hissarlik II, 3.[1] It is obvious that Hissarlik, thus dominating the metal trade, did not need any forcible interference in Greece to destroy Early Ægean commerce—whether here and there the destruction of early settlements is due to expeditions from the Hellespont, of course, we cannot say, but it need not be assumed.[2] Crete, however, aloof in the Southern Ægean, not dependent for its prosperity on trade exclusively, because of its size and of its comparative fertility, was not adversely affected by those economic changes which we have just discussed. In the south, there was ample room for the enterprise of its sailors, who obviously preferred, without any pressure from Hissarlik which was jealous to maintain an exclusive sphere of influence in Europe, to sail towards the highly developed centres of civilization in Syria and Egypt, instead of frequenting the barbarous "dark" continent in the Northern Ægean. At the same time, the skill of the Cretan craftsmen insured a supply of goods which were prized abroad, and against which metals and other commodities could be exchanged. Thus Crete neither shared the decline which befell the Cyclades and, to some extent, the Greek mainland in the Middle Ægean Period, nor was it left behind in the general advance of the Near-Eastern civilizations. And, in fact, we find in Egypt that small objects of personal adornment, -scarabs, cylinder-beads and amulets of gold-wire,—show a profusion of spiral designs from the reign of Sesostris I onwards.[3] In a rich XIIth Dynasty tomb at Abydos appears a beautiful vase of the purest Kamares ware.[4] Sherds of this ware are found at Kahun[5]; there we may even assume, perhaps, that Cretan craftsmen were employed, for the labourers' town contained no houses which one could suppose to have lodged wealthy possessors of specially imported goods. A diorite statue of Middle Kingdom workmanship and some scarabs found in Crete in Middle Minoan surroundings supplement the evidence from the other side.[6]

[1] For analyses, see Dörpfeld, *Troja und Ilion*, 421, sqq. It is not certain whether bronze occurs before the third "Bauperiode" of the Second City.

[2] We have noted already above that on the route leading north via Chalkis and Orchomenos, the influences of Hissarlik are most clearly manifest (vide supra, p. 144, n. 1), but there is no reason to speak with Mr. Childe (*Dawn of European Civilization*, 50) of an Anatolian Colony on the Euripos. The majority of the objects and the graves themselves are too clearly Cycladic.

[3] See Newberry, *Scarabs*, 80, and pls. xviii, xix Petrie, *Scarabs and Cylinders*, pls. xiv, xv; *Buttons and Design-scarabs*, pls. vii., ix. And for gold-work, Petrie, *Arts and Crafts*, fig. 96. The spirals on predynastic pots over and over again quoted in connection with the origin of the spiral decoration are irrelevant They are executed with a multiple-brush, are never combined in systems, and die out in the course of the Predynastic Period.

[4] *Liverpool Annals*, v, pp. 107 sqq., pls. xiii, xiv (Reign of Sesostris III and Amenemhat I).

[5] Petrie, *Illahun, Kahun, and Gurob*, pl. i, Nos. 2–15 (Reign of Sesostris III). See discussion of parallels by Fimmen, *Kret. Myk. Kultur*, 157 sqq.

[6] Evans, *Palace of Minos*, i, 226 sqq. The amethyst scarab, p. 199, fig. 147, is decidedly Egyptian work of the XIIth Dynasty.

At Byblos, in tombs of local rulers, silver vessels of Ægean type appear, as M. Pottier has seen, side by side with Egyptian importations.[1] Thus the self-contained civilization independently developing, which we found in Crete in the Early Ægean Period, no longer characterizes the island; more and more it rises to the rank of an international Power with an ever-extending field for its activity.

Then came the sensational fall of Hissarlik II, at the height of its power. Its effect on contemporaneous Europe must have been enormous, and it may well be that the rich development of the Hungarian Bronze Age goes back to this event, because it now could displace the Caucasian centre, with which intercourse was interrupted and could not be renewed because of the continuous upheaval in Asia Minor; but even in the Ægean the fall of the emporium on the Hellespont created a void, and there was, obviously, but one Power able, and apparently willing, to fill the open place. After what precedes it seems probable that the disappearance of the emporium on the Hellespont created, in the first place, a necessity for the Ægeans and mainlanders to procure tin in some way for themselves. It is possible that the explorations into the Western Mediterranean carried out in earlier times, and which may well have been followed by a rather spasmodic intercourse all through Middle Ægean days, only now bore full fruit. Whether Spain became the source of supply or whether already tin from Cornwall and the Scilly Islands was carried through France to the Mediterranean coast—the Ægean route via Sicily and Sardinia to Liguria may well have had a branch route to the West; a Late Minoan II vase is found at Marseilles—all these matters are not yet cleared up. Certain it is, however, that Crete now appears as the recognized leader in the whole Ægean area. The preceding period had prepared the Minoan civilization for the expansion which now became possible, and thus we find that the Middle Ægean Period, which began with the rise of Hissarlik II, comes to an end with the fall of that city[2]; and the Late Minoan, the Late Ægean Period, is marked by the thalassocracy of the Lords of Knossos.

[1] Clermont-Ganneau and others, *Les Travaux Archéol. en Syrie de* 1920 *à* 1922, pp. 39 sqq. and pl. lxiv, No. 10. For No. 11 the Ægean origin is less certain; it is closely related to the pottery vessels found in the Byblite necropolis (*Mon. Piot*, xxvii, p. 21, fig. 15), with which it shares the triangular spout. Similar spouts, stuck sideways on the vessel, triangular in section and containing a strainer, are common amongst M. Chantre's finds from Kara Euyuk. A second one was found in another of the tombs: *Mon. Piot*, xxvii, 22, with fig. 22.

[2] The date of the fall of Hissarlik is roughly fixed between two points: treasure L contained Egyptian XIIth Dynasty beads (Schaefer, in *Dörpfeld, Troja und Ilion*, 392). Mr. Childe, on the other hand, has pointed out that it must antedate the opening up of the amber-trade from the Baltic, as otherwise we should certainly find amber in so rich a town as Hissarlik (*Archæologia*, lxxiv, p. 179). Its destruction would thus fall in the 19th century B.C., and as Early Cycladic imported vessels are found in it as well (vide infra, p. 172, n. 4), the city may well have stood a thousand years.

¶ 21. With the destruction of Hissarlik II we approach the last group of the problems which fall within the scope of the present volume. Unfortunately, that most important event is wrapped in darkness. On the site it is marked by a thick layer of burnt ashes and the miserable remains of the so-called Third City, in which the survivors of the disaster were huddled together, a witness to the thoroughness of the catastrophe. It is, after all, not so inexplicable that we know so little of what happened. For the fall of Hissarlik II opens another of those great and dark periods of upheaval, where in an apparent chaos the conditions are created which determine the subsequent developments. Indeed, only the force which moves peoples in migration can account for a deed such as the Greeks in later days were but able to achieve after an exhausting war of ten long years. Out of the turmoil there arise in the Near East two fresh groups of people which we may find, perhaps, responsible for the deed: the Indo-Europeans and the Hittites. But it may well be that, for our problem, we have not to face an alternative at all, because the coming into prominence of Aryans and Hittites in *Anatolia* may be nothing but two aspects of the same event. If we say that the Hittites appear on the stage in this period we must add at once the reservation: as a *political* power. They are mentioned as having sacked Babylon about 1925 B.C., and the Hittite empire which flourished in the middle of the Second Millennium is the outcome of the changes with which that era began. But *anthropologically* the Hittites are at any time inseparable from Asia Minor. That is clearly shown by Prof. von Luschan's research[1]; as they meet us on the monuments, too, both in the Peninsula and in Egypt, they are the typical aborigines of Armenia and Anatolia. Moreover, Dr. Andrae's work at Assur has established the existence of the type already for the earlier half of the Third Millennium.[2]

The Hittite Empire.

With the Aryans in Western Asia the case is entirely different. They are anthropologically untraceable, obviously absorbed by the native population. It is merely in cultural matters, in language above all, that we notice their presence in Mitanni and Chatti.[3] But it seems not unreasonable to combine those two strains of facts, and to surmise that the one and only time that the aboriginal population of Anatolia was organized into an independent, unified, and powerful empire, the cause of it was the provision thereto by an Indo-European element of the requisite energy and organizing power. Thus, without attempting to fix the racial identity of the sackers of Hissarlik II, we may, for a start, be satisfied to state that its fall must have been caused by those movements of people which precede the formation of the Hittite empire.[4]

[1] L. von Luschan, "The Early Inhabitants of Western Asia," *Huxley Memorial Lecture*, 1911.

[2] Andrae, *Die Archaischen Ishtartempel in Assur*, pl. 43 and pl. 47 *c-f*. Professor V. Christian first identified the type with the Armenoid Anatolians (*Mitth. Wiener Anthrop. Ges.*, 1923, p. 235). See also Frankfort, "Studies," I, p. 88.

[3] See on the absorption of the Aryans, and also on parallel cases, Walter Otto, in *Hist. Zeitschr.*, 117, p. 205.

[4] *Vide infra*, pp. 158; 176.

If we confine ourselves to a purely archæological line of research, we gain a great advantage, because we avoid the many complications besetting the philologist ;[1] for we can treat, to begin with, the typical material civilization of the Hittite empire as a unity. But before doing so we have to emphasize a self-imposed limitation : if every period can be considered equally well the beginning of something new as the end of what preceded, then we shall only be concerned with the latter aspect of the Hittite empire ; we shall utilize whatever amongst its remains throws further light on our former research. For if we were to set out on a thorough discussion of its monuments, we should find ourselves at the same time entangled in the problems of the Mycenæan Age, together with those concerning the wanderings of the Peoples of the Sea—facts which even the most liberal-minded reader will hardly consent to incorporate amongst the "earliest interrelations of Asia, Europe and the Ægean," and which can only be adequately treated in a volume devoted to them exclusively.

Thus leaving the more imposing monuments which seem to derive from a later period, we ask whether our humble guide, the pottery, has still to teach us something about the centuries with which we are here concerned. In the museums at Paris, Berlin, and Constantinople there is indeed a large amount of pottery from legal and illegal excavations at Boghazkeui and Kara Euyuk, which are mostly unpublished and therefore not easy to deal with.[2] As a whole, the groups in all these museums do not differ, and they seem therefore to reflect adequately the state of Hittite ceramics during the course of time in which those sites were inhabited.

[1] These are carefully discussed by Walter Otto, *Hist. Zeitschr.*, 117, pp. 189–208, 465 sqq., who rightly objects to a generalization of the word "Hittites" as used by O. Weber (in Knudston, *Tell el-Amarna*, Tafeln ii, 1086 ; and in *Hethitische Kunst*, 7) and others, an abuse which threatens to make the name useless for scientific terminology. It has to be reserved for the historically fixed Hittite empire which, as a consequence of certain as yet obscure factors, arises in the Second Millennium, B.C. If it were practicable, it would be a solution to adopt Prof. Böhl's distinction (*Kanaanäer und Hebräer*, p. 13), and to speak of "Hethites" for the group of people, and of "Hittites" if the historically known people is meant. On the other hand, Otto's restrictions may create difficulties which have no foundation in fact, when he looks for an "Einzelvolk der Hethiter" to which he can ascribe certain monuments and linguistic and anthropological peculiarities. For it may well be that such an "Einzelvolk" never existed. Otto admits (loc. cit., 210) the federal character of the Hittite state ; the mixed character of its population may also have existed throughout. The archæologist has here an advantage, in so far as he can start from a unity which has really existed for a certain time ; the total of the material remains representing Hittite civilisation.

[2] In Paris, the Louvre possesses the finds of M. Gaudin, and the Musée Guimet those of M. Chantre ; in Berlin the Antiquarium has a rich collection of bought vessels and the Vorder Asiatische Abteilung shares with the "Archaeological Seminar" of the university Winckler's finds from Boghazkeui ; part of these are kept in Constantinople, where they are considerably enriched by the important results of Macridy Bey's excavations. The Archæological Institute of the University of Liverpool possesses a small collection of sherds which Prof. Garstang found, and another instructive collection given by different travellers is in the Ashmolean Museum at Oxford. While this volume was in the press, the collection of the Louvre has been beautifully published by H. de Genouillac, *Céramique Cappadocienne*, 1926.

1

2

THERIOMORPH HITTITE VASES. Scale 2 : 5.

At Kara Euyk we know that already in the end of the Third Millennium a trading colony flourished there of people somehow related to the later Assyrians.[1] Boghaskeui, on the other hand, seems only to have been inhabited a few generations before the Hittite empire rose to its full power; a fact also suggested by the identity of the city's name, Chatti, and that of the people as a political power. The bulk of the pottery we may certainly assume to belong to the 14th 12th century B.C., and most of it may fall in the middle if this period when the Hittite empire flourished most. Let us hope for a speedy publication of the important finds which Dr. Macridy Bey made at the Hittite capital, for then we may be able to define much more clearly the state of Hittite ceramics under Shubbiluliuma, if once we know which wares were found there together with those specimens of the smooth, grey-yellow, highly shiny Egyptian pottery which, often assuming the shape of the "pilgrim-bottle" or lentil-shaped flasks with neck and handle, is so characteristic of Tell el-Amarna, though it is already found in the reign of Amenhotep III.[2] Then also we may know whether the "Syrian flasks" found in Egypt exclusively in the reign of Thutmoses III, who dominated Northern Syria,[3] really appear, as seems to be the case, at Boghazkeui together with those *later* Egyptian wares and painted Hittite fabrics, thus substantiating archæologically what we know already from historical sources: that Egyptian influence did not extend, under Thutmoses' successors, beyond the Lebanon, and that it was the Hittite king who had become the overlord of those regions. At present we have to leave those vessels of the Constantinople museum out of account.

But though no objective evidence derived from the circumstances of the finding is available, the material itself suggests another line of research. For if the groups in the museums mentioned above do not differ much in their composition, the pottery itself is a far from homogeneous product, and if we thus find that the Hittite empire consisted of an admittedly heterogeneous population, and further that it possessed an equally heterogeneous pottery, we may at least try to trace some of the elements composing the first by analysing the latter.

Anatolian elements in Hittite Empire.

¶ 22. Amongst the pottery from the main Cappadocian sites two classes can be distinguished at first sight: a complex group of painted wares and a homogeneous class of red monochrome ware. The latter we know already; it is the descendant of a native Anatolian fabric, the development of which down to the end of Hissarlik II we have followed in detail.[4] At Boghazkeui, however, this red-wash ware has

[1] Landsberger, *Assyrische Handelskolonien in Kleinasien aus dem dritten Jahrtausend.*

[2] These shapes are, of course, *originally* Asiatic (*vide supra*, p. 58, n. 2*e*, and for the lentoid flask, *Katalog Schliemann Sammlg.*, 2105) but the fabric is unmistakably Egyptian; it is M. Franchet's "lissée blanche" (*Rapport sur une Mission*, etc., p. 113).

[3] Frankfort, "Studies," I, p. 107 sq.

[4] *Vide supra*, p. 69 sqq.

undergone a real renaissance; the red wash is perfected, and is beautifully smooth and shiny. The vessels, mostly wheel-made, are either small and graceful cups (Pl. XII, 5, 6) or beak-spouted jugs often of enormous size and with three handles like a hydria (Pl. XII, 1). The beaks have a sharply pointed "chin," which is a new and distinctive feature. From Kara Euyuk we have some simpler examples, hand made,[1] which testify that the beautiful Hittite vessels are true descendants of the old Anatolian class from which at an earlier date and in more Western regions "Vassiliki" ware and "Urfirnis" sprang. In this red monochrome ware we have, therefore, certainly an exponent of an age-old Anatolian element. Its close connection with the Hittites of history need, moreover, not be postulated on the strength of its occurrence at Boghazkeui alone: Professor Ludwig Curtius, who has studied, but has not yet published, the pottery which the German expedition found at that city, firstly states that no stratigraphical evidence was obtained to distinguish stages within the mass of ceramics,[2] but secondly that he considers the red monochrome ware to be Hittite, as in two instances it bore stamped-in Hittite signs.[3] But at the same time we must maintain that to this period must also be ascribed two different classes of painted ware, besides the red monochrome ceramics, for transitional forms between those various fabrics are found.

Red monochrome ware.

In the first place there is the famous vessel bought by Mr. Woolley for the Ashmolean Museum (Pl. XII, 1).[4] It is a very good example, both in shape and quality of the fully developed red monochrome ware; but it combines (as do some other vessels in Berlin (Pl. X, 6) and Constantinople) the monochrome technique with a paint technique which uses an opaque chalky white slip with black designs. This technique is common amongst the Hittite wares (Pl. XII, 2–4, 7). But besides there is a third technique, the painting of black designs on the polished body-clay of the vessel, which varies in colour, as usual, from red, via brown, to buff (Pl. IX, X 1–3, 7).[5] Again, this third technique must have overlapped with the white-slip ware, for there are vessels in the two techniques with almost identical designs, and

[1] Chantre, *Mission en Cappadoce*, pl. v, 1; viii, 3. A vase almost identical with the latter is in the museum at Constantinople. It belongs to the typically Anatolian class of vessels with strainer spouts. Notice that here as well as in some of the better examples from Boghazkeui and in Mr. Woolley's pot from Kara Euyuk, the red wash only covers the upper half of the vessel as is usual in this ware.

[2] In Hugo Grothe, *Meine Vorderasien Expedition*, i, p. 278.

[3] Loc. cit., p. 285. Cf. Genouillac, loc. cit., I, 33.

[4] *Liverpool Annals*, ix, pl. iii, 1.

[5] If one wished to be quite exact, one would have to speak of a slip here as well, but then the distinction would be most cumbersome to express. The point is that in this case the slip is a finely levigated clay not otherwise differing from the body-clay and thus forms essentially part of the vessel as such; the black design only is added as decoration. The white "slip" contains clay besides the white material, and is therefore a "slip," but its *raison d'être* has nothing to do with the function of the vessel as such, and lies merely in the decorative value as background for the painted designs.

there are others on which the two techniques are combined.[1] But if we are thus, again, forced to the conclusion that at Boghazkeui a variety of pot-fabrics existed at the same time, that does not imply that all of these are of the same age, origin, and affinities.

We know the history of the red monochrome ware which is as old as the history of Anatolian pottery itself: the stage with which it corresponds (red-wash ware) was already reached in the third structural period of Hissarlik II.

White-slip ware.

The pottery with the thick, chalky white slip is neither in Anatolia nor anywhere else in existence before the period with which we are dealing; significantly enough, it appears in Cyprus (that mirror in which so many changes in surrounding regions are reflected) quite suddenly in the First Late Cypriote Period, *i.e.* just before the *floruit* of Boghazkeui.[2]

Black-on-red ware.

But the black-on-polished red or buff ware rivals in antiquity with the red monochrome ware. For it goes back to a technical stage in which the transition from black-ware to red-ware production is achieved: it has not, however, taken part in the further refinement in which the increasing height of the temperature of the firing leads to thinner-walled vessels and the displacement of the compact red slip by a red wash. Of course the absence of dated material from Eastern Asia Minor makes it impossible to quote with certainty early examples. But definite proofs come from other sites; in the East it is found already in the first settlement at Anau[3]: in the south-east it intrudes, with other signs of northern influences, in the first city at Susa,[4] and finally the shapes of the Cappadocian examples of this technique also bear witness of their early date.[5]

It therefore seems to have flourished in Armenia and perhaps in Cappadocia, while in the rest of Anatolia the red-wash ware was developed. But if the limitation

[1] Cf. pl. ix, 4; x, 6.

[2] Myres, *Handbook of the Cesnola Collection*, p. 31; Gjerstad, *Studies on Prehistoric Cyprus*, pp. 194 sqq., 277 sqq., 310 sqq.

[3] Pumpelly, *Explorations in Turkestan*, i, p. 73, and pls. 22–28, where all the shades, which the varying proportion of iron and lime in the clay produce by different temperatures, are seen. Note also that the slip (once confusingly referred to as a "coat of colour") is polished before the painting, exactly as in our Hittite vessels.

[4] Frankfort, "Studies," I, p. 38 sqq. I here relied on the evidence of a vase from the Caucasus (pl. v, 1) which, as M. Pottier maintains, may be of late date. The pot-hook spirals certainly suggest this; but, even if this were so, one must still claim for it technically similar ancestors, as the Anau pottery shows. The striking technical differences between the related red ware at Susa and the ordinary pottery of Susa remain, of course, valid, and so does the explanation of the concurrently appearing button-seals in the south. Our preceding remarks as to the predominant importance of the Caucasus region in the distribution of metal in the Copper Age, which may have started from there (vide supra, ¶20), add indeed interest and probability to the intrusion of these red wares in Susa, I, as it may well point to the source of its metal.

[5] The jugs with a straight high beak-spout recall Early Ægean and Early Cypriote types. The cup, fig. 16 *b*, is paralleled in its shape by early vessels from Hissarlik II (*Katal. Schl. Slg.*, 859).

of its province towards the West remains uncertain, any such limitation was broken through by the movement of peoples which preceded the foundation of the Hittite empire and which consisted mainly of a strong advance from East to West through the peninsula. It is probable that the Indo-European element entered Asia by the Caucasus ranges,[1] but the upheaval was too thorough for their arrival to account for it by itself. No doubt other tribes moved on with the stream, and the exactly similar movements of the Cimmerians, Scythians and Osman Turks teach us too much about the destructive power of such advances for us to be disinclined to ascribe to its force the fall of Hissarlik II. When, after some time, settlement followed the upheaval, we find the new political unity of the peninsula reflected in a more equal mixture of ceramic styles ; in Cappadocia the red-wash ware, developed in the West, is generally adopted and perfected ; on the other hand we find in Phrygia, at Gordion, painted wares of the Eastern style in use.

Gordion.

This latter fact needs some further discussion. The evidence comes from tumulus III excavated by G. and A. Koerte in 1902, which the discoverers date very much too late. The evidence by which one can go is, it must be admitted, scanty, but it seems highly probable that the interment belongs to the last centuries of the Second Millennium,[2] and thus may belong to the last period of the Hittite empire. Even then the wonderful " Bierservice " (found all packed together in a large bronze vessel), which interests us, seems to have been an antiquated affair ; Dr. Koerte noted that it consisted of seven sets of vessels, which were originally no doubt identical and contained each a water-jug, two " beer-jugs " with side spout and strainer, and a small pot with a cover.[3] But the costly crockery had apparently suffered by long use ; already the buried " service " is an amalgamation of two different sets, one in black bucchero and the other painted ; further certain groups, like the water-jars, could only be completed by collecting all sorts of odd vessels.[4] It looks as if an old possession of the family, handed down through generations, was disposed of now that

[1] Evidence summarized by Childe, *The Aryans*, pp. 28 sqq. An intrusion of Indo-Europeans from the East, also upheld by Otto (*Historische Zeitschr.*, 117, p. 217), and again suggested on other grounds in *Zeitschr. f. Assyriologie*, 1914, pp. 65 sqq., would account as well for the Caucasian features in Hittite equipment (Childe, loc. cit.) as for the northern features in Hittite architecture, as Dr. Val. Müller admits (*Athen. Mitth.*, xxxxii, pp. 163 sqq.).

[2] A. and G. Koerte, *Gordion*, pp. 92 sqq., especially 98, 7th or 8th Century B.C. The evidence is vague. Iron was used in Anatolia already in the 14th Century B.C., and sent in the form of gifts to Egypt ; and if Koerte (loc. cit., p. 79) rightly concludes from the circumstances of the finding that it was still very valuable, then a period not far from this date would have to be accepted for the interment. The large bronze vessels are certainly no sign of a late date, if we think of the finds at Zafer Papoura and Tylissos (cf. especially the handles of Koerte, loc. cit. p. 72, fig. 50, with *Archæologia*, lix, pl. lxxxix). The fibulæ remain, and they suggest a date towards the end of the Second Millennium.

[3] Koerte, loc. cit., pp. 84 sqq., who cites Xenophon's appreciation of Armenian beer (*Anab.*, iv, 5, 26).

[4] The seven water-jars are composed of one painted schnabelkanne, one painted mug, two black schnabelkannen, and three black mugs of different types.

time had damaged it too much, or perhaps the taste of the survivors took a greater fancy to an up-to-date equipment for their banquets. Consequently it may be several generations older than the interment. What strikes us is that most of the painted vessels show a peculiar and rich elaboration of the rectilinear style known from Cappadocia. But some of them, notably one jug,[1] are in design almost identical with those from the East on the one hand, and resembles in shape the white slip Cypriote jugs on the other. More striking still is the fact that three of the added odd vessels differ in technique as well as in design from their companions in the elaborate painted style.[2] Their spout is a real beak spout, which could be paralleled best from Middle Minoan examples; they have no band handles, but a really ceramic round one, which is in one case divided into two; they are not completely covered with the decoration but only on the upper part. The designs are not closely interwoven, like tapestry, but consist of simple and merely linear designs. Their concentric circles are not drawn from the centre as in the other instances but round some object. And, technically, they lack the opaque white slip, but carry the designs on the polished surface of the vessel itself. The finds at Gordion therefore not only prove that the eastern painted fabric penetrated into Western Anatolia; they also show that here again, ware with designs on the polished body-clay has an earlier character than that with the white slip.[3]

A mere glance at the designs on the Cappadocian pottery to which we now return leads to the same conclusion. For if we exclude a certain amount of designs common to both classes, and thus to be ascribed to the period in which they overlapped, we find, on the one hand, in the technique using the polished body-clay of the vessel as background for its designs (Pl. IX, 1–3, and figs. 16, 17) early simple shapes and strong well-drawn rectilinear designs, those in fact which Prof. Curtius has called "die geometrische Mattmalerei des Rautenstils." On the other hand we find on the white-slip vessels (Pl. XII, 2–5) careless forceless wavy lines heaped together now and then combined with the remainder of the rectilinear decoration, or with animal representations which are obviously late. In the intermediate period, in which the strong "Rautenstil" designs appear both on polished and on white-slip vessels, the latter technique seems to have arisen. Prof. Myres has long ago shown

[1] Koerte, *Gordion*, p. 59, fig. 25. The meander of ibid., p. 55, fig. 18, and pl. iii, is often paralleled at Boghazkeui. Nevertheless that vessel, with those from figs. 21, 24, 26, and pls. i, iii, presents a later development of the Cappadocian style.

[2] Ibid., 56, figs. 19, 20; ibid., p. 59, fig. 24, is in the same technique, but has already a more complicated design.

[3] The chronological relation between the Boghazkeui and the Gordion pottery is the following: the three vessels with designs on polished buff body (*Koerte*, loc. cit., 56, figs. 19, 20) seems to be contemporaneous with the *floruit* of the Hatti capital. The elaborate wares are a western elaboration of the rectilinear style at Boghazkeui in which other elements, such as animal representations and concentric circles, are absorbed. In the later development there is thus a divergence between the development in Cappadocia and in Phrygia. On the older vessels, see below, pp. 173 sq.

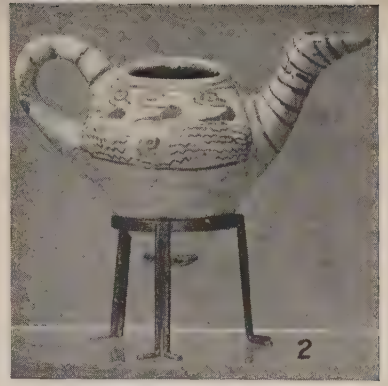
that the natural conditions in Cappadocia make such an invention easy.[1] The instigation to adopt it may have been the incipient polychromy in which red is used as an additional colour alongside the black, a colour-effect which is not successful on a background which assumes natural clay colours, shading from buff to brown and red, but which requires a dead-white *fond* to show off well. Thus we may conclude that painted Hittite ceramics developed out of an older eastern fabric in which black designs were painted on the polished buff body-clay of the vessel, but that with the

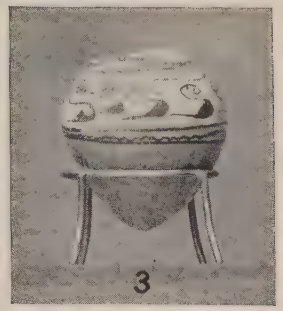
FIG. 16.—Early Hittite pottery.

development of polychromy a dead-white slip was adopted. This invention was soon taken over by Cypriote potters who in this period, as in all others, were kept posted of all improvements and innovations on the mainland because the metal of the island made it the centre of a lively trade with the opposite shores. The Cypriote evidence proves that the innovation must have fallen as early as the period which sees the founding of Hittite unity and power about 1600 B.C.

Conclusion. Thus all three techniques discussed in this paragraph are Anatolian. But the red-wash ware and the ware decorated with dark painted designs on the polished

[1] *Journ. Roy. Anthrop. Inst.*, 1903, pp. 394 sqq.





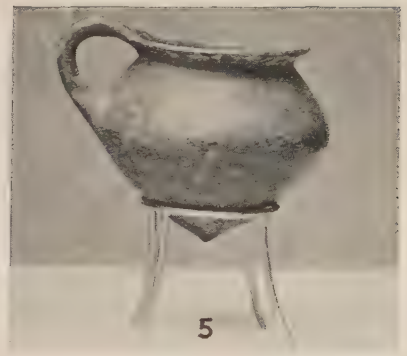


Plate XII.

HITTITE POTTERY.

1. Red wash on upper part and white chalky slip under black designs; 2, 3, 4, 7. Black paint on white chalky slip; 5, 6. Red wash ware.

body-clay of the pot, are rooted in that continuous and entirely native development, which embraces the pottery of Asia Minor from its earliest known stage. These wares may therefore be considered the exponents of the aboriginal population, the existence of which before the arrival of the Indo-Europeans, was first proved, on philological grounds, by Kretschmer,[1] and whose physical peculiarities were defined by von Luschan,[2] while the occurrence of identical personal names in the Cappadocian tablets and in the Hittite documents,[3] *i.e.* before and after the founding of the Hittite Empire, again confirms the persistence of that native element, which lived from time immemorial in the peninsula. Its importance in the fabric of Hittite civilization may be measured by the preponderance of those two fabrics amongst its pottery.

The white-slip ware, on the contrary, is a purely *Hittite* creation,[4] and therefore Anatolian, but based on heterogeneous elements. The "Rautenstil" may represent the old aboriginal more eastern stock than that represented by the red-wash ware.

Addenda.

Whilst this volume is going to press the first news of Prof. Hrozny's important discoveries at Kultepeh has been published.[5] The pottery, which is said to be of the same date as the tablets (*c.* 2300 B.C.), is exactly what our analysis would lead us to expect; there is the side-spouted jar, so copiously represented among Chantre's finds, either in rough- or in red-wash ware.[6] There is, further, painted ware with the simplest rectilinear designs, like our fig. 16, *a*. These are the two groups which our foregoing analysis has put aside as the earliest Hittite ceramics. In addition, Prof. Hrozny pictures an elegant beak-spouted jug, already with the "chin" of Hittite ceramics (Pl. XII, 1), but also with two "breasts" like Middle Cycladic vases from Melos. Whether there is a connection one cannot say as yet.

The discoveries at Kultepeh, at all events, reveal the state of Anatolian ceramics towards the end of the Third Millennium. When Dr. Macridy Bey has published the wares which he found at Boghazkeui, together with the imported Egyptian and Syrian pottery, we may see whether we diagnosed its condition rightly during the rise of the Hittite empire in the 15th Century B.C. Its state in the days of the greatest Hittite expansion, however, is well exemplified by a cup found in the British Museum

[1] Kretschmer, *Einleitung in die Geschichte der Griechischen Sprache*, pp. 288 sqq. See also Ed. Meyer, *Geschichte des Altertums*, i, 23, 691 sqq.

[2] "The Early Inhabitants of Western Asia," *Huxley Memorial Lecture*, 1902.

[3] Landsberger, *Assyrische Handelskolonien*, 32.

[4] *Vide supra*, p. 154, n. 1.

[5] *Prager Presse*, 1 Mai, 1926, Bilderbeilage; *Illustrated London News*, 2 Oct., 1926.

[6] *Vide supra*, p. 152, n. 1, Chantre, *Mission en Cappadoce*, pl. viii, 3.

excavations at Carchemish (Fig. 18), which Mr. Woolley kindly allows me to illustrate here. It belongs entirely to the Hittite ceramics both in form and decoration. Its rectilinear designs find frequent parallels at Boghazkeui, and its concentric circles both there and at Gordion. Its handle shows the flat top part, known from Boghazkeui and Gordion. In both these localities it appears sometimes with a vertical disk-ornament on either side. The Carchemish cup shows the horizontal "stick" known from a Gordion jug. The occurrence of this Hittite vessel at Carchemish suggests that it belongs to the latter half of the 14th, or perhaps to the 13th, Century B.C., and shows, with the parallels just quoted, how a comparatively homogeneous pottery existed at that period.

FIG. 18.—Cup from Carchemish.

Syrian elements in Hittite Empire.

¶ 23. In the foregoing paragraph we have analysed the technique of the Hittite ceramics; let us now turn to the peculiar decoration of the painted ware from Boghazkeui. We see then that, underlying the peculiar designs in which pot-hook spirals, concentric circles, and animal representations are used, there appears persistently a framework of rectilinear bands. On some vessels these latter form the sole decoration (Pl. IX, fig. 16); this is, in its purest form, the "geometrische Mattmalerei des Rautenstils." Its character is admirably described by Prof. Curtius: "Kurz, durch reiche verwendung von parallelen Diagonalen, verschiedenartiger Füllung, durch den Unterschied von breiten führenden Rahmenstreifen und feineren Linien der Füllung, Schachbrettmuster usw. kommt eine an Motiven zwar nicht reiche, in der Kombination dieser Motiven aber sehr elastische, kasuistisch durchgearbeitete Formengrammatik zustande, die in ihrer Beweglichkeit und dekorativen Sicherkeit den meisten geometrischen Gruppen der Mattmalerei . . . überlegen ist."[1] Indeed, this style is peculiarly Anatolian. Its correlative seems to be the use of black-painted designs on a polished surface, *i.e.* that technique which we have found to be characteristic of Cappadocia and the regions further

[1] In Grothe, *Meine Vorder Asien Expedition*, 276 sq.

east; and as at Anau I we find designs which may conceivably be a primitive stage of the "Rautenstil",[1] there is the probability that the "Rautenstil" is an aboriginal style of Eastern Asia Minor.

In its early form the "Rautenstil" knows neither polychromy nor a division of its decoration in separate compartments (metope-style, "Rahmen-Stil"). It is no free-field style either, for it accentuates the structurally important parts such as neck and handle; but it takes the whole circumference of the vessel as an undivided field (Umlaufstil), and is related in this point to the earliest West-Anatolian vase-decoration, derived by Hubert Schmidt from "necklace-decoration" (Hängeschmuck), which, however, soon develops into the broad bands of parallel zigzags which go all round the body of the pot.[2] In this stylistic similarity the native Anatolian character of the "Rautenstil" is again testified.

Fig. 17.—Hittite cup.

But a number of painted vessels of the mature Hittite style show just those motives which do not seem to belong to the original Anatolian vase-painting; there is sometimes an over-generous use of concentric circles as "Füll-Ornamentik"[3] (fig. 18); there is the use of red as an auxiliary colour, an innovation which we have surmised to lie at the root of the introduction of the chalky-white slip[4]; there is a clear metope-style gaining ground (Pl. XII)[5]; and, finally, we find animals drawn

[1] Pumpelly, *Explorations in Turkestan*, i, pl. xxii. *Vide supra*, p. 157, n. 8.

[2] *Ann. Brit. School Athens*, xviii, 90 sqq.

[3] Weirdest of all is their use of several sherds from the German excavations at Boghazkeui, where they appear between legs and horns of animals painted in black silhouette. See further, Chantre, *Mission on Cappadoce*, pl. iii, 1, 4; xi, 4: *Journ. Roy. Anthrop. Inst.*, 1903, pl. xi, 1, 10.

[4] *Vide supra*, p. 160.

[5] Rare on the earlier pieces (e.g. *Mém. de la Soc. des Antiq. de France*, 1901, fig. 2), but later common: Chantre, loc. cit., pl. xi, 1; xii, 4; xiii, 1. Perrot and Chipier, *Hist. de l'Art*, etc., v, fig. 232, 233. Grothe, loc. cit., pl. xviii, 5, 7.

either in black silhouette or filled in with red or with hatched or line-filled bodies (Pl. XII, 2).[1]

It is not doubtful from which quarter the concentric circles, so strangely contrasting with the severely rectilinear designs at home in Anatolia, are derived. The

FIG. 19.—Hittite pottery.

French excavations at Byblos and Kafer Djerra have shown that this feature was at home in Syria in the time of the XIIth Dynasty in Egypt (Pl. VII, 4); and finds from Cyprus, Crete, and Palestine allow us to trace back its Syrian existence with great probability to even earlier times.[2] On the other hand, it still occurs on the

[1] *Journ. Roy. Anthrop. Inst.*, 1903, 385, fig. 9, 10; Grothe, loc. cit., i, pl. xvi, 1, 2, all from Kara Euyuk. Further, Chantre, loc. cit., xi, 1; xiv, 7. Perrot and Chipiez, loc. cit., figs. 232, 233. Several examples with quadrupeds, *e.g.* goats, in Berlin from Boghazkeui and B. C. H. xxxi, 256, which link up entirely in technique with Hittite fragments, M. Pottier ingeniously explains the last fragment as a reproduction of a scene of the combat between pygmies and cranes. As this seems a prehellenic myth the identification does not affect our dating.

[2] *Vide supra*, p. 82, n. 1.

painted pottery from Gordion, recurs on late-looking wheel-made fabrics at Fugla,[1] and other Pisidian sites, whence it invades Cyprus (with more success than in the Third Millennium, when the bottle referred to earlier in this volume remains a solitary instance) with the Iron Age in the 12th century B.C.[2]

The other non-Anatolian features in the Hittite ceramics, *e.g.* trichromy and metope-style and animals in silhouette or with cross-hatched bodies, appear concurrently in Palestine and also in the second civilization at Susa and the early layers at Assur.[3] If it is not yet certain whether all three characteristics can be dated in Palestine before the Hyksos Period (Palestine Middle Bronze Age)—for the trichromy this seems certain[4]—the evidence from Susa and Assur proves the existence at a much earlier date of a North Syrian painted pottery which extended as far south as South-Western Persia, and eventually also drew Palestine within its spell.[5] It is thus unavoidable to accept the view that their concurrent appearance in mature Hittite ceramics reveals a corresponding absorption of at least part of this North Syrian civilization by the Hittite empire.

Now it is almost generally accepted that under Thutmoses IV and Amenhotep III the Hittites gradually dominated North Syria,[6] till in the Tell el-Amarna period Shubbiluliuma sees the fulfilment of his ambitions. The Syrian elements which are then embraced by the Hittite empire cannot account, however, for the Syrian features in the Hittite pottery which we have traced, for the combination of native Anatolian and old Syrian features with a new and peculiar style is already complete in the bulk of the pottery from Boghazkeui and Kara Euyuk which we have dated to this very period. The introduction of a white slip which seems to be an Anatolian

[1] *Ann. Brit. School Athens*, xvi, pl. vii, Nos. 4, 5. Ibidem, 15, 16, link up on the one hand with the late and loosened designs from Boghazkeui, and on the other with pottery from Deve Huyuk in North Syria, in the Ashmolean Museum.

[2] That it reached Cyprus from Anatolia and not from Syria is suggested by the abundance, amongst the Early Iron Age Cypriote pottery, of the strainer jug with a handle in a plane which makes a right angle with the spout, a persistent and early Anatolian type. (*Vide supra*, p. 58, n. 2f.)

[3] Frankfort, "Studies," I, 69 sqq.

[4] Vincent, in *Classifications des céramiques antiques* (*Union Acad. Intern.*), pp. 8, 13. The difficulty is here again that in Palestine the remains are so telescoped that it is hard to distinguish them in the early periods (*vide supra*, pp. 72 sq.). At Askalon (see *Quarterly Statement*, 1923, pp. 73 sqq.) all the features with which we are here concerned appeared in the deepest layers, but though the site contained pottery of undoubted early date, the bulk was of the Hyksos period, and hence no certain proof comes from there. The evidence of Tell Taa'nek, Mutesellim and other sites is just as indecisive.

[5] This is what underlies the numerous "Chaldæo-Elamite" features in the repertoire of the Palestinian pot-painters discussed in detail by H. Vincent in *Revue Syrie*, 1924. (See also "Studies," I, p. 70.) This North Syrian pottery first mingles with, and then gradually supersedes the older painted wares from Central Syria and Palestine, with their lustrous orange paint on a cream-coloured slip, a movement which may well fall in the First Intermediate Period. (*Vide supra*, p. 83).

[6] *E.g.* Knudtzon, *Tell el-Amarna Tafeln* i, p. 44. Otto, *Hist. Zeitschr.*, 117, p. 209 n. 1.

invention antedates the Tell el-Amarna period, as the Cypriote material shows, and is, nevertheless, only intelligible as a consequence of the adoption of polychromy in Anatolia under Syrian influence. Thus we are compelled to seek in an earlier period events which broke down the barrier of the Taurus. This, then, can only have happened in the great wanderings which fall in the first centuries of the Second Millennium and from which the Hittite empire emerged. It is, on the face of it, probable that the powerful movements within Asia Minor would scatter people into Syria. Thus the conditions would be created from which in a succeeding period of settlement a closer bond between Cappadocia and North Syria would result. The intrusion of decorative schemes in Anatolian ceramics would be easily explicable, the more so if hostile pressure in Syria tended to weld the two regions together or even throw back North Syrians behind the safeguarding boundary of the Taurus.

The Hyksos. These theoretical considerations are exactly met by what can actually be observed in the archæological material of the Hyksos period. There is, of course, no doubt that the invasion of Egypt at the end of the Middle Kingdom forms part of the same group of movements, of which we first hear when Babylon is sacked by people from Hatti and which, on the other hand, led to the destruction of Hissarlik II and ultimately to the establishment of the Hittite empire. The masses which invaded Egypt consisted presumably, as in the First Intermediate period, of Anatolian and of Syrian elements. In Egypt, the archæological evidence is, of course, scanty, because the invaders stood on so much lower a cultural plane than the country they conquered that they adopted its material civilization wholesale, and their presence becomes evident mostly in distortions which always accompany the adoption of unaccustomed forms of expression by foreigners. Nevertheless, the Hyksos period, the consequences of which are traceable as slowly acting agencies in almost every province of Egyptian civilization during the New Kingdom, lastingly effects the material civilization of the Nile valley in one conspicuous way ; vase-painting, practically out of fashion since the Late Predynastic Period, appears suddenly again,[1] a change the more noticeable, as otherwise the differences between the XIIth Dynasty and early XVIIIth Dynasty ceramics are slight.[2]

Those painted wares of the early XVIIIth Dynasty, which last well into the New Kingdom till, under Amenhotep III, a peculiarly Egyptian blue-painted pottery arises, have quite a desintegrated style ; nevertheless, one recognizes now and again a clear metope-style,[3] and the use of red lines bordered by black.[4] But recently, vessels have been found which show us an earlier stage of these Egyptian painted wares ; in the first place, there are one or two small pots from Abusir el-Melek, which

[1] So already Prof. Peet, *Cemeteries of Abydos*, ii, 69. Trade is an inadequate explanation for the adoption of a new technique ; this against Garstang, *El Arabah*, 17.

[2] Randall MacIver and Mace, *El Amrah and Abydos*, ii, 69 ; Peet, loc. cit., ii, 70.

[3] *E.g.* Peet, loc. cit., pl. xxxiii, B 15 ; B 12.

[4] Randall MacIver and Mace, *El Amrah*, pl. lv, 6 e.

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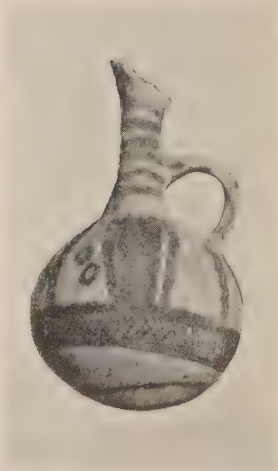

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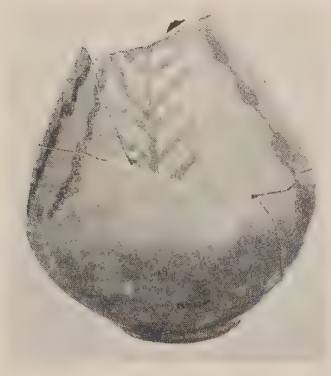

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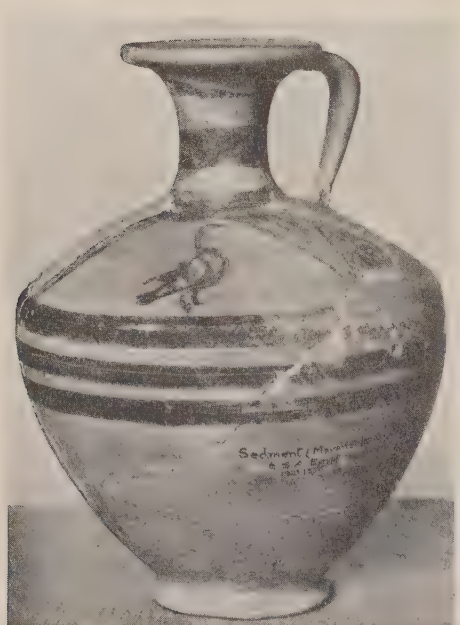

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7

"HYKSOS POTTERY" FROM EGYPT AND CYPRUS.

Scale 1 : 3.
(No. 6. 2 : 7.)

1–3. Sedment and Deshasheh, trichrome; 4, 5. Sedment, black on polished red; 6. Sedment; 7. Qau el Kebir; 8 and 9. Cyprus.

as Dr. Scharff has made probable, were found with actual interments of the hated oppressors[1]; they show a pure metope-style, such as is paralleled by a cup from Sendshirli in Berlin,[2] not unlike the shapes found at Boghazkeui, and further by doubtless intrusive vessels in Southern Babylonia, and (not quite as closely but yet sufficiently) by slightly later vessels from "Hittite" burial-grounds in North Syria.[3] Besides Mr. Brunton's excavations at Sedment and Qau el-Kebir for the British School of Archæology in Egypt have revealed the actual prototypes of the painted Egyptian pottery so generally used under Thutmoses III (Pl. XIII, 1–7). These bottles and jugs we may well call Hyksos pottery; the pit-graves in which some of them were found and the Hyksos scarabs which occasionally accompanied them entitle us to use such a denomination, though it is impossible to say whether they all actually belong to the period of oppression; for it is becoming increasingly evident that the liberation by Aahmes did not bring about a sudden change in material culture. As to our bottles and jugs, we first notice the polychromy (Pl. XIII, 1–3), red bands with black borders, and, on the last two examples, motives which recur in an exactly similar form in the earlier Cappadocian style (Pls. IX, 2; X, 1, 2, 6). As, moreover, these vessels appear at the same time in Cyprus (Pl. XIII, 8, 9) only the assumption of a North Syrian centre can account for the distribution of this highly specialized pottery.[4] There is some additional evidence for such a view. The painted birds are unlike anything Egyptian and belong to the Syrian style of vase-painting as already known from Susa II, Palestine, and later also from Cappadocia. Two vessels (Pl. XIII, 4, 5) are of the highly polished red-slip ware in which the Syrian admittedly anthropomorphic vases, imported in the early XVIIIth Dynasty, are made. To these, on the other hand, belongs typologically a vase in the shape of a hawk in black punctated ware (Tell el-Yahudieh ware) as Mr. Glanville has shown.[5] The technique appears in Egypt only down to Thutmoses I.[6] Of our two red-polished examples one (No. 5) has a *bilbil* shape, which is generally used just after the Hyksos period, in a different fabric; its

[1] Scharff, *Das Vorgeschichtliche Graeberfeld von Abusir el Melek*, pl. lxx, Nos. 484, 485, and pp. 96–101.

[2] Cup from Sendshirli in the Vorderasiatische Abteilung, Berlin, inv. 1567, where is also a handleless crater with stand-ring, said to come from Surghul in Mesopotamia.

[3] *Liverpool Annals*, vi, pl. xxvi, c, d.

[4] Brunton, loc. cit., i, pl. xlv, 67–71; Petrie, *Deshasheh*, Tomb 44; Peet, *Cemeteries of Abydos*, iii, Tomb D 114; Petrie, *Gizeh and Rifeh*, pl. xxvii, D 66, 68; pl. xxvii, F 141; Murray, *Excavations in Cyprus*, 33, No. 206 and p. 48, No. 1174 (which belong to the early stratum of the finds: see Poulsen, *Jahrbuch Arch. Inst.*, 1911, p. 225); also Gjerstad, *Studies, etc.*, 172, jugs Nos. 1, 4. Notice that the eyelet pins have exactly the same distribution as this class of painted pottery, and occur in the same period or slightly earlier (*Liverpool Annals*, vi, pl. xxi, from North Syria; Myres, *Catalogue Cyprus Museum*, Nos. 591–8; Petrie, *Hyksos and Israelite Cities*, pl. vi, 12–14, and p. 12).

[5] *Journ. of Egypt. Arch.*, xii, p. 68. There are numerous small bottles of painted ware found in Egypt which till now have only parallels in Cyprus, but may originally be Syrian. We can only distinguish here if we embark on a comprehensive treatment of the painted pottery of the New Kingdom, which would lead us too far.

[6] Petrie, *Gizeh and Rifeh*, 25.

decoration with the pothook spiral links up with Anatolia, as we shall see in the next paragraph. The other shows the tree-motive, known from Anau III and from North Syria.[1] It is further worth noting that at Sedment we also find a bottle[2] which recurs identical in shape but undecorated amongst Chantre's unpublished finds, coming from Karaif Keuy in Cappadocia. But the shape belongs to a *Syrian* family.

The North Syrian origin of the Hyksos pottery cannot therefore be doubted, and, in fact, it supplies a much more unambiguous and conclusive proof of the affinities of the Hyksos than was possible on the basis of Manetho's account and identifications and the few more or less Semitic names. But at the same time the ceramic evidence shows, by the fact that the similarities quoted affect both Asia Minor and North Syria, that the Taurus barrier was indeed broken through at least some three centuries before the Amarna period. And this view is again corroborated by the evidence from Palestine, where the low cultural *niveau* admitted of a more thorough change. Even in Egypt, however, a few changes which may conceivably go back to Anatolian influence can be traced.[3] But Mr. Phythian Adams in his acute and highly important discussion of Palestinian ceramics, has noticed how the red wares of the Middle Bronze Age, *i.e.* the Hyksos period, differ both in their coating and in their clay (which is orange and yellow) from those of the preceding period[4]; in the Museum at Jerusalem one can satisfy oneself that in both technical details there is complete agreement between the new wares appearing in Palestine and the red-wash ware from Anatolia. And the similarity does not stop there; for in the same period appear the Anatolian "divided handle," and the button-shaped bottom, paralleled in Cappadocia (fig. 16*b*) as well as amongst the Hyksos pottery in Egypt[5]; we find, in Palestine as in

[1] Pumpelly, *Explorations in Turkestan*, i, pl. xxxiv; *Liverpool Annals*, vi, pl. xxvi c. It is remarkable that the same vessel shows dots strung on a line which are only known from Anau I (Pumpelly, loc. cit., pl. xxx, 2, 3; and xxxi), and in the province of Honan. Further evidence has to be waited for before we can decide whether this is an isolated feature due to accident, or whether it forms part of a group of phenomena important enough to argue interrelation. (See also Appendix I).

[2] Guy Brunton, *Sedment*, ii, pl. lix, 15.

[3] One might adduce the importation of the horse, though that may have come by way of Mitanni through Northern Syria and not from beyond the Taurus. One may also point out a certain decorative scheme (broad enclosing lines and narrow filling lines) which is not at home in Syria but in Asia Minor, and also perhaps the red ware in the Early XVIIIth Dynasty, while buff ware prevailed in the XIIth Dynasty.

[4] *Quarterly Statement, Palestine Explor. Fund*, 1923, p. 68.

[5] *Quarterly Statement*, loc. cit., pl. i, 17. Macalister, *Gezer*, iii, pl. xl, Nos. 10–18; pl. lxii. Closely related to these Hittite bottles are, of course, the black-punctated Tell el Yahudieh vases, recently discussed in so great detail by Prof. Junker (*Sitzungsber. der Akad. d. Wiss., Wien*, 1918, *Abb.* 3) that we need not further insist upon their peculiarities and distribution. As Prof. Bonnet has shown (*Zeitschr. f. Aegypt. Sprache*, etc., lix, pp. 119 sqq.), their affinities to Syrian forms are too strong to allow any doubt as to their ultimate origin, though the centre of manufacture is as yet unknown. Far away Nubia can certainly not account for their distribution, which indeed seems due to trade, and then, of course, not trade in the pots themselves, but in their contents.

Anatolia, that the red wash is only applied to the top half of the vessel[1]; and finally, we find in Palestine the bowl with the polished red cross on the inside which, at Hissarlik, appears after the fall of the Second City and, in fact, persists into the Fifth,[2] which is nothing but the first stage of the Sixth, the strong Hittite affinities of which we shall soon have to discuss.

There can therefore be no reasonable doubt that a strong Anatolian element secured a foothold in Palestine during the Hyksos period. We need not here consider the problem whether it was represented by Armenoid people (Hugo Winckler's "*Teschub-Schicht*"[3]) or Indo-Europeans, as Gemoll and others want to maintain.[4] For though the history of the red-wash ware in Anatolia speaks in favour of a non-Indo-European purely Anatolian element, if Indo-Europeans did intervene, as is quite conceivable, here as elsewhere, they would not necessarily have left any archæological trace. What mainly matters for us, however, is that the Taurus barrier was passed in this period. And now we may go one step further still.

Hyksos and Hittites.

As Prof. Sethe has shown, various New Kingdom texts explicitly identify the Syrian opponents with former oppressors.[5] Particularly striking is the fact that according to Prof. Sethe's ingenious emendation, the introduction to the account of the *First* Syrian campaign of Thutmoses III. refers in some detail to the Hyksos oppression of the past. And Prof. Breasted was the first to note that Josephus' rendering of Manetho's account shows that later tradition indeed identified the Conqueror of Syria with the Expeller of the Hyksos.[6] It appears more and more clearly that the Asiatic wars of the New Kingdom were but the continuation of the work begun by Aahmes the Liberator, attempts to prevent a repetition of foreign invasion by securing the bridge-head on the far side of the Sinai desert. It would be strange indeed if amongst the Egyptian opponents no similar tradition of hereditary hostility was to be found. Since we know now that considerable groups of people of Anatolian affinities existed in Syria and Palestine in the Hyksos period, it is only natural to suppose that the shock caused by the expulsion of the Hyksos from Egypt was felt north of the Taurus as well. If Hatshepsut and Thutmoses III thought to continue to fight in North Syria against the descendants of the abominable "Shepherd Kings," their opponents battled with the "Erbfeind" who

[1] *Quarterly Statement*, loc. cit., p. 68.

[2] Ibidem, pl. i; *Annual Report Palest. Explor. Fund*, II, pl. xvii, 10; Macalister, *Gezer*, pl. lxii; Dörpfeld, *Troja und Ilion*, 266, and especially fig. 345, which, in accordance with what has been said before (*vide supra*, p. 69) belongs to the Fifth City.

[3] *Vorderasien im zweiten Jahrtausend*, 74 sqq.

[4] Kittel (*Geschichte des Volkes Israel*, i, 16 sqq., 54 sq.) and Böhl (*Kanaanäer und Hebräer*, 15 sq., 26 sqq.) discuss the Biblical evidence concerning an early non-Semitic element in the Palestinian population; but it is almost impossible to distinguish there the results of an invasion in the Hyksos period from the remainders of an original possibly non-Semitic layer.

[5] *Zeitsch. f. Aegypt. Sprache*, etc., xlvii, p. 73 sqq.

[6] Breasted, *A History of Egypt*, 220.

had robbed them of the riches of the Nile valley.[1] Thus Shubbiluliuma did not set out to found a new empire, but to reconquer what was traditionally his; and no doubt this tradition was crystallized round the ephemeral but wide dominion which, in all probability Khian, whose monuments are found as far afield as Crete and Babylon, had once succeeded in creating.[2]

But to return to the point from which we started at the beginning of this paragraph, the presence of a strong Syrian element in the Hittite empire at the height of its power, as is revealed by the analysis of its pottery, now finds explanation. We have seen that it is impossible on chronological grounds to account for it by the conquest of Syria by the Hittites in the 14th century. We now see that it goes back to the end of the Hyksos period, when the pressure caused by Aahmes' sortie and the continuous offensive of the Egyptian armies in Palestine and Southern Syria could transmit itself northwards without being stopped by the Taurus, because the preceding centuries had in their upheaval broken down that barrier and united, loosely, no doubt, but effectively, Cappadocia and Northern Syria.

It is relevant to insist here once more on the value of ceramic material. If some might object that our evidence stands in no relation to the weight and bearing of the conclusions we reach, let us then stress again the fact that the *popular* character of ceramics make it a much safer guide than any product of more costly material, if we search for the constituents of the population by which a certain civilization is produced. If only we avoid going by simple similarities such as may arise independently in separate regions, we are bound to admit that a coherent group of characteristics like those we have dealt with definitely asks for an historical explanation. The one we put forward in our train of argument seems to meet the case.

Phrygian elements in the Hittite Empire.

¶ 24. The distinctive features of the mature Hittite pottery cannot be explained merely by the aboriginal Anatolian and Syrian elements, such as we traced them in

[1] To accept the existence of such a tradition, it is by no means necessary to raise the impossible claim of the existence of a united Hittite empire embracing Syria and Cappadocia *before* Shubbiluliuma's reign; no doubt the political unity was the great king's own creation. But political division need not exclude the existence of a common tradition; the history of Hebrews, Jews and Israelites is the best proof to the contrary. I willingly endorse Prof. Breasted's view (*History of Egypt*, 220), that "in the Syrian domination of the King of Kadesh . . . we should recognize the last nucleus of the Hyksos empire." But the mixture of peoples at the beginning of the Hyksos period and the return movement of Syrians into Cappadocia after Aahmes' victories made the Cappadocian Hittites regard the wars between Thutmoses III and Kadesh as a war against their own kin.

[2] As Ed. Meyer, *Gesch. des Altertums*, i, 22, §306, states, an extensive empire under Khian of the same loosely knit structure as that of the Huns and Mongols is not at all impossible. One may agree, though, with Dr. Hall that the occurrence of easily transportable monuments is no conclusive proof of the dominion over the places where it is found (*Ancient History of the Near East*, 217 sq.). The fact remains that Khian's monuments in Egypt are more numerous than that of any known Hyksos king, and that his is the only one of their names found outside Egypt.

the foregoing paragraph ; for neither of these can be made responsible for what is a striking motive in the designs : the pot-hook spiral, which appears strangely incongruous amid the rectilinear "Rautenstil." There is only one region where it is found as an equally important element in the repertoire of the vase-painters, and fortunately in such a way, that its relationship with the Cappadocian instances cannot be doubted for a moment ; that region is Macedonia. On either side we find the curious design appended to the corners of triangles or lozenges,[1] combined in groups of three or four to form a little "Füllornament,"[2] or ending in a long tail, a zigzag for instance,[3] or simply hanging along a horizontal band, preferably in corners[4] (fig. 19). We even find now and again quite peculiar compositions of which all

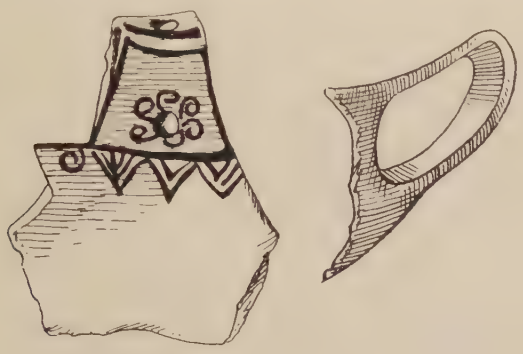

Fig. 20.—Handle of Macedonian vase.

elements recur on the Asiatic side.[5] The pot-hook spiral is already in itself a none too common motive in early pottery ; and these similarities are too striking for us to postulate an independent origin for them in the two cases under discussion. No uncertainty remains as to the region to which priority must be ascribed. In Anatolia it appears strangely out of place ; its origin in Macedonia, with polished Danubian wares and spiral decoration is more easily explicable,[6] and the probability that it is a local Macedonian development is further shown by the following facts. In the first place, the painted ware in Macedonia has an incised counterpart, which as M. Rey's careful research has shown, appears earlier than the painted variety with

[1] Rey, *Observations*, etc., 214, fig. 31 ; pl. xxix, 8 ; xxx, 6 ; xxxii, 3 ; xxxiii, 3. (See fig. 20.)

[2] *Zeitsch. f. Ethnol.*, 1905, p. 100 ; *Catal. Greek Vases Brit. Museum*, i, 1, No. A1000, 1 ; Rey, loc. cit., 213, fig. 29 ; De Morgan, *Mém. Délég. en Perse*, xiii, fig. 200 ; Louvre, Collection Gaudin (unpublished).

[3] Rey, loc. cit., pl. xxvi, 10 ; *Liverpool Annals*, xii, pl. xii, 9 ; Chantre, *Mission en Cappadoce*, pl. xiv, 3.

[4] Rey, loc. cit., pl. xxviii, 9 : xxix, 5 : xxx, 1, 3, 11 ; *Zeitsch. f. Ethnol.*, 1905, p. 106 ; De Morgan, loc. cit., figs. 199, 200 ; Chantre, loc. cit., pl. xi, 5 : xii, 4 ; Grothe, loc. cit., pl. cxvi, 1, 2 : cxviii, 5, 7.

[5] Cf. Rey, loc. cit., fig. 31, with our pl. x, 2.

[6] *Vide supra*, p. 31 sqq., 46, on the Danubian affinities of Macedonia.

which it is so closely connected.[1] On the other hand, however, it is related to a large class of Macedonian incised wares of purely Danubian affinities.[2]

Secondly, it is worth remarking that as a consequence of the disintegration of the pure spiral decoration we find in several parts of the Ægean area, designs closely resembling those from Macedonia.[3] No doubt the latter had a character of its own, but the parallelisms show that its development in the periphery of Ægean civilization presents no anomaly. In fact, we find at Hissarlik one or two instances of similar phenomena ; but they bear unmistakably the stamp of Cycladic origin and disappear without leaving a trace.[4] In Macedonia the Danubian ethnic base provided, of course, a more favourable *milieu*.

M. Rey has fortunately been able to fix unambiguously the relative date of the earliest appearance and of the widest use of the native Macedonian style. Not only the first but also the latter precede the period of Mycenæan importations, and there is a fair probability that it also preceded that period considerably, not only because of the depth of soil in which it is found before the appearance of Mycenæan sherds,[5] but also because, as Mr. Heurtley has shown, a typical product of Llianokladhi III is closely related to the Macedonian painted ware, and that settlement hardly outlasts the Middle Ægean Period.[6] Thus the Macedonian pottery antedates

[1] Rey, loc. cit., 213 sqq., and especially table on p. 229. Mr. Casson agrees, *Antiq. Journal*, 1926, 65.

[2] Particularly striking is also the fact that a curious handle shape common in the painted Macedonian ware is only explicable by Italian examples, which are typologically older and thus suggest a Danubian centre of diffusion (fig. 20 ; *vide supra*, p. 51, n. 2).

[3] *E.g.* at *Phylakopi*, pl. xiii, 17 ; xiv, 9 : Middle Helladic Shreds from Mycenæ in the Nauplia Museum ; Middle Minoan I : Bosanquet, *Palaikastro*, pl. iv, *c* ; Evans, *Palace*, I, fig. 134, *c-e* It is also found in the "Palace Style" (Late Minoan II) : *Palaikastro*, 39, fig. 27 ; Furtwaengler und Loeschke, *Myk. Tongefaesse*, pl. II. (See also ibidem, pl. iv, 18 ; vi, 34).

[4] *Katalog Schliemann Sammlg.*, Nos. 1740, 2470. Both are clearly Cycladic in shape as well as in design : cf. *Ann. Brit. School, Athens*, xxii, pl. ix ; *Phylakopi*, iii, figs. 80, 81. The turned-up feet occur at Pyrgos in Crete (*Arch. Deltion*, 1918). These Early Cycladic parallels show that they must have been imported in an early stage of Hissarlik II. There is, of course, no relation with the Hittite style of a thousand years later.

[5] Rey, loc. cit., 229.

[6] Mr. Heurtley, in *Liverpool Annals*, xii, 23, fig. 5. The Middle Helladic date of Lianok ladhi III is suggested, but not unambiguously fixed, by the appearance of Minyan ware ; but the shapes of the painted pottery clinch the matter, for they are clearly Middle Helladic, and link up even with Early Helladic tankard shapes. The patterned Urfirnis of the Argolis and Corinthia, with its fringed bands, may also have left a trace in the painted Lianokladhi ware (Wace and Thompson, *Preh. Thessaly*, figs. 125–128). This is easily explicable as Lianokladhi lies on the main route from the Argolis via Bœotia to the north, though it so happens that no patterned "Urfirnis" is found at Lianokladhi itself. Otherwise the designs now and again recall "Mattmalerei" designs of Middle Helladic I. On the whole, it seems clear after Mr. Heurtley's comparison that the Lianokladhi ware is a southern variety of the Macedonian pottery, produced, however, in accordance with influences which did not affect the regions further north. This view is confirmed by the concurrent appearance at Lianokladhi of wish-bone handles of the Thessalian Γ 3 fabric at home in Macedonia (*vide supra*, p. 47, n. 5). The occurrence at Lianokladhi of both the wish-bone handles and the painted ware thus testifies to a southward movement from Macedonia. See also p. 176 with n. 3.

by several centuries the mature ware of Boghazkeui, and, as in the West no trace of this kind of ware is found, trade cannot explain the striking similarities specified at the beginning of this paragraph. Moreover, trade would be, in any case, an inadequate explanation for the appearance of the pot-hook spiral in surroundings which display all through so pronounced a preference for severely rectilinear designs. The only possibility is to assume a migration from Macedonia into Asia Minor.

And in this case we may circumscribe more closely than before, when we had to be satisfied with purely geographical denominations, the ethnic element which has thus entered into the domains of what became the Hittite empire and which, as the pottery shows, counted for something in the composition of its population. For just as we find in Macedonia a certain ceramic style developing out of local antecedents and persisting long (till at last it is absorbed by the all-conquering Mycenæan fabrics), and sending, too, a branch into Anatolia, just so classical authors agree that the Phrygians, of Macedonian stock, where their relatives still survived as Briges, had entered Asia Minor.[1] It is impossible not to identify those Phrygians of the literary sources with the stream which brought the pot-hook spiral into Anatolian ceramics. Its appearance in Cappadocia is, of course, not a direct but an indirect consequence of the arrival of the Phrygians : the unification of the peninsula into a Hittite empire, and the consequent concentration of elements from various parts at the capital, brought the motive further east than the domain of the Phrygians extended.[2] At the same time we understand its complete absence in the Troad and Western Anatolia in general. That was the country of the related Mysians, who came from more northern Balkan regions,[3] and the Macedonian ware to which we have referred does *not* occur further than Macedonia. On the other hand, Fick has traced the Briges to the head of the Adriatic,[4] and we have found that a particular type of handle, characteristic of the painted Macedonian ware, is only explicable by adducing Italian types which are presumably of Illyrian descent.[5] Again we find, therefore, a close agreement between archæological and philological evidence.

We may finally draw attention to another piece of evidence which gives additional confirmation to an argument already sufficiently strong in itself. Two of the three vessels with a strainer spout from the Phrygian site Gordion, which we considered on

[1] *Herod.*, vii, 73.

[2] In this connection it is interesting to note that the positive results of Mr. Arkwright's critical essay on Lycian and Phrygian names is, that it establishes Phrygian influences far beyond the regions which were traditionally theirs. (*Journ. Hell. Stud.*, 1918, 45 sqq., especially 47, 67 sqq.)

[3] Walter Leaf, *Troy*, 297 sqq. The Mysians are archæologically untraceable ; whether their arrival in Asia precedes that of the Phrygians, I am not prepared to say. But see Ed. Meyer, *Geschichte des Altertums*, i, 23, p. 692.

[4] Fick, *Hattiden und Danubier in Griechenland*, 35.

[5] *Vide supra*, p. 51, n. 2.

technical grounds to be older than the others and to be typologically earlier than the mature Hittite style, show designs *not* found in Anatolia, but typical of the Macedonian incised wares which accompany the painted pottery there.[1]

The identification of Phrygians with those who brought the pot-hook spiral into Anatolia raises a series of problems. If there are amongst the Aryan elements in the Hittite empire any which show Iranian affinities, and which may conceivably have entered Anatolia from the east,[2] and if, on the other hand, Prof. Hrozny is right in distinguishing *centum* elements in its official language, where is then the place of the Phrygians, who, as the ceramics show, were not without influence even in Cappadocian centres, and whose language is strangely incongruent on this point? If, further, the Macedonian pottery, from which certain features of the Cappadocian wares ultimately derive, is a local growth on the north-western shores of the Ægean,[3] must we then identify the Phrygians with the native population there? Is then, consequently, the Danubian civilization Indo-European? Mr. Childe has ably summed up the objections to such a view[4]; and, indeed, his own thesis that the Indo-European "Urheimat" would be in Southern Russia, is very attractive. But two facts remain to be accounted for: firstly, not only does the province of the Illyrian–Thracian–Phrygian group of languages coincide exactly with that particular *nuance* of Danubian civilization which we have met in the Northern Balkans, and which is differentiated in course of time from that on the Middle Danube by the elaboration of certain peculiar features, *e.g.* the wish-bone and crescent-shaped handles as well as by the absorption of Tripolje features, especially in Thrace. More astounding still is the fact that Fick, who actually calls the speakers of this group of languages "Danubian," finds *traces* of them exactly in those parts outside their domain proper where we have found remains of the Danubian invasion of the Early Copper Age, or of even earlier Danubian influence:[5] and in keeping with his evidence based on place-names is an extensive legendary tradition on the presence of Thracians in Phocis and Bœotia.[6]

Were there not the generally accepted view that Indo-Europeans are not to be expected within our purview in the first centuries of the Third Millennium, one would, with so striking a coincidence of philological and archæological evidence, not

[1] Koerte, *Gordion*, 56, figs. 19, 20; and *vide supra*, p. 159. Compare for the designs (except of course the concentric circles) *Zeitschr. f. Ethnol.*, 1905, p. 102, fig. 40; others are in the Ashmolean Museum. See also *Papabasileios*, loc. cit., pl. viii, 6; *Ephemeris*, 1899, pl. ix, 20, accounted for by the Danubian elements on the islands. It occurs also on the earliest pottery from Tiryns, which is explained in the same way.

[2] *Vide supra*, p. 158, n. 1.

[3] For the Danubian affinities of Macedonia, *vide supra*, pp. 31; 33; 41; 46 sqq.

[4] Childe, *The Aryans*, 138 sqq.

[5] Fick, *Hattiden und Danubier*, passim; a short table on p. 53 gives distribution of "Danubian" place-names.

[6] Casson, loc. cit., 102 sqq.

hesitate to identify the Aryans who spoke the not easily classifiable Illyrian-Thracian-Phrygian tongues with the Southern Danubians at least. Even if one should believe it possible that the Aryans left no archæological trace in the Balkans and that their extension both into Italy and into Anatolia is marked by material remains, especially ceramics, which are the outcome of a long pre-Aryan development, the coincidence of the early distribution of Danubian remains in Greece with the traces of the Illyrian-Thracian languages discovered by Fick would make one loath to accept such a view. There is just a possibility that at Hissarlik we find, in the third stage of the Second City, features heralding the previous arrival of Nordics one thinks of the megaron house-type and the remains of "Burganlage" in the arrangement of the town,[1] and of the famous hammer-axes of treasure L—but the evidence is in neither case conclusive.[2] Anyhow, we have to count with the possibility that there were Indo-Europeans in the Northern Balkans long before the Phrygians crossed the straits.

The recent treatment of the Indo-European problem by Mr. Childe may give us a further clue here. Mr. Childe has made an exceedingly strong case for an Indo-European cradle in the Southern Russian steppes, an idea already suggested by

[1] Valentin Mueller in *Athen. Mitth.* xxxxii, p. 104 sqq. *Vide supra*, p. 98, n. 3.

[2] I am not so sure, in fact, that those battle-axes are really a sign of Nordics at Hissarlik, much less, as Mr. Childe puts it (*The Aryans*, 133), "a branch of a European stem pushed across the straits." The magnificent hammer-axes of treasure L do not stand alone; there is quite a number of simple types (*Katalog Schliemann Sammlg.*, 7182–7220), which enter into the same category of popular *outillage* as the mass of pottery and there is not the slightest indication that those axes derive from one group of people and the pottery from another, unless one wishes again to maintain that Nordic men had arrived with their weapons. Unfortunately, Åberg in his excellent monograph (*Das Nordische Kulturgebeit in Mittel Europa*, especially pp. 108 sqq.) does not discuss the ordinary implements from Hissarlik. Is it, however, so impossible that the battle-axes are as thoroughly Anatolian as the pottery? (*vide supra*, ¶ 9, ¶ 10). As Prof. Hubert Schmidt, has shown, a near relative of them survives as a sign of dignity in the Hittite kings (*Praeh. Zeitschr.*, iv, 28). This mace-axe, in essentials not differing from the hammer-axe, is found extensively used in the Caucasus region. All the mace-axes are much younger than the hammer-axes—may we assume that they derived from the latter by a diminution of the cumbersome hammer-end? This latter development would then be typically Asiatic and Caucasian, for the mace-axe seems not to occur in Europe. Note also that one of the beautiful axes of treasure L is of lapis lazuli, and thus points by its material to the East, as does perhaps, the green stone of the others. Note also that treasure L contained beads, according to Prof. Schaefer, of Egyptian make and Middle Kingdom date (Dörpfeld, *Troja und Ilion*, p. 392), while the nearest European parallel to the hammer-axes are found in the depot find from Borodina in Bessarabia (Von Stern, in *Materials for Russian Arch.*, 1914, 1, sqq.), dated by Hubert Schmidt c. 1500 (*Vorgeschichte Europa's*, 42), and by Ebert (*Süd Russland im Altertum*) c. 1700 B.C.; and Åberg, loc. cit. 109, admits explicitly that it is several centuries younger than Hissarlik II and also typologically "younger." The bronze objects found with them are indeed more advanced than those from Hissarlik II, and the hammer-axes found in Asia have therefore no certainly earlier and immediate prototype. See also Mr. Childe's convincing argument that the European stone axes, adzes, may derive from Asiatic copper prototypes, reaching Europe from the Caucasus region (*Dawn of European Civilization* 14 sqq.). The same may have happened with the hammer-axes.

Mr. Peake,[1] who has recently maintained that his "steppe-folk" descend from the Solutreans.[2] Mr. Childe further makes it appear probable that what he calls Danubian II is the continuation of the old Danubian civilization with an admixture of Indo-Europeans. May we assume that Indo-Europeans from the South Russian steppes broke into the Danubian basin already about 3000 B.C., destroyed on their way some centres of the Tripolje culture, like Erösd, without, however, causing its total decline, and that what we called in Greece the great migration, was caused by the pressure of these invading steppe-folk. One would then have to surmise that some Indo-European elements were eventually involved in the closing stages of the migration,[3] and continued to trickle into the northern parts of the Balkan Peninsula.[4] Thus, the Illyrian-Thracian-Phrygian group of peoples would slowly evolve with an ever-increasing Indo-European element. Taking into account the exceptional position of their language within the Indo-European group, it may well be that the material discussed in this paragraph may lead to important conclusions as to the date at which *satem* and *centum* languages separated, and perhaps also on the much-discussed earliest Indo-European layer in Greece, conclusions which do not fall within the competence of the present writer.

However, of one matter we may well be certain: the arrival of the Phrygians in Asia was not the cause of the fall of Hissarlik II. That is shown by the complete absence of their distinctive pottery from the Troad, and, in fact, from all Mysia. Moreover, as Hubert Schmidt has shown, the development on the site as exemplified by the ceramics presents no break which would correspond with those revealed by the architecture, until the Sixth City arises. Thus it remains probable, as we have surmised already, that during the great movements from East to West which open what we may well call (extending an Egyptological term to the Near East as a whole), the Second Intermediate Period, about 2000 B.C., Hissarlik II was destroyed. Only a destruction in the period of the greatest turmoil would explain why a city so marvellously situated had no successor; for we know that Hissarlik III only sheltered the impoverished survivors of the calamity. At the same time we understand how the Phrygians could freely enter the peninsula, and also why they found no inducement to choose the most western province as their domain; Hissarlik III or, perhaps, its even more miserable successor, which may have existed when they arrived, could neither lure them with hope of loot nor suggest that the surrounding country was worth living in. Thus, the Phrygians turned to the Sangarius valley.

[1] Harold Peake, "Racial Elements concerned in the First Siege of Troy," in *Journ. Roy. Anthrop. Inst.*, 1916.

[2] Idem, *The Bronze Age and the Celtic World.*

[3] Mr. Childe sees "Indo-European" features in the Third Thessalian Period, which forms the last phase of the migration from the North. *Vide supra*, p. 47, n. 5.

[4] An assumption made the more probable by the fact that the distinction between Danubian, I and II cannot be applied to Greece, where we only know Danubian remains as such. Moreover, Mr. Childe himself only separates the two Danubian periods by about two centuries.

Troy.

It is interesting to consider the revival of Hissarlik in the Sixth City, Homer's Troy. The many features which link its remains with those of the older settlements show that the old aboriginal Anatolian element survived to enjoy the new period of prosperity. The explanation of the latter is also shown clearly by the remains; the city is again the door through which East and West communicate. The West is the West of the new conditions represented by the Late Minoan II and Mycenæan pottery: the East means now, primarily, the Hittite empire, which flourishes in the Peninsula. The similarities which link up Troy with the Hittite culture, and through this medium with the regions further East, are numerous; in the first place, there appears, as Hubert Schmidt has shown, a Caucasian and Mesopotamian mace-axe.[1] In the pottery there is perhaps a late descendant of our well-known Syrian flask,[2] and certain cups,[3] assuming a shape well known in the white-slip ware from Cappadocia. Pot-stands of the Mesopotamian type now also appear at Troy,[4] and even, as Hubert Schmidt has seen, the sheath of a Hittite curved sword.[5]

Was it only Troy which acted as intermediary between the Hittites and the Ægean? We have noted already that painted pottery is not found in North-Western Asia Minor. But amongst the earliest vessels decorated in the "Rautenstil," in Cappadocia (Pl. IX, 1) occurs a type of vase which becomes common in the Ægean from the Third Middle Minoan Period onward.[6] The designs of a contemporary vessel (Pl. IX, 2) find close parallels at Phylakopi.[6a] A smaller vessel recalls a favourite decoration of the Knossian "Palace Style" (Late Minoan II).[7] Near Lake Van was found a small cup, in paint and design indistinguishable from the Mycenæan vases also found at Tell el-Amarna in Egypt.[8] The beak-spouted jugs from near Lake Urmya (Fig. 21) of the same type as those found in Anau III,[9] and also in the Caucasus region,[10] hardly belong in this context, because their shape links up with Early Minoan III vessels exclusively,[11] and I prefer to see in them developments from an originally Anatolian type, also known from Kara Euyuk,[12] from which the Cretan vessels may have sprung

[1] *Praehist. Zeitschr.*, iv, p. 28 sqq. [2] *Katalog. Schliemann Sammlg.*, 3012.

[3] E.g. ibid., 3177. [4] *Katalog Schliemann Samml.*, 3230, 3231. See Frankfort, "Studies," I, 127. [5] *Praehist. Zeitschr.*, iv, 26.

[6] Boyd-Hawes, *Gournia*, pl. ix, 2; Bosanquet and Dawkins, *Palaikastro*, fig. 85*a*; cf. *Hazzidakis, Tylissos*, 33, fig. 15, from Zakro: *Annual Brit. School of Arch.*, vii, fig. 43, *Journ. Hell. Stud.*, xxii, pl. xii. But an early example (Early Minoan II–III), comes from Pyrgos in Northern Crete: *Arch. Deltion*, 1918.

[6a] *Phylakopi*, pls. v, 12B; xii, 9, 20. [7] Also G. Brunton, *Sedment*, ii, pl. lix, 19.

[8] The cup is in Berlin (Vorgesch. Abt.). For Amarna see Petrie, *Tell el-Amarna*, pl. xxvii, 42.

[9] Pumpelly, *Explorations in Turkestan*, i, pl. xii, 1.

[10] *Mémoires de la Société des Antiquaires du Nord*, 1901, pl. i, 6.

[11] *Brit. Museum Catal. of Greek Vases*, i, 1, No. A 442; Seager, *Mochlos*, fig. 49, Nos. 73–75; fig. 50, Nos. 90–92. And even more striking is the similarity between those East Anatolian side-spouted jugs and certain stone vases; Xanthoudides, *Vaulted Tombs of Mesarà*, pls. xxxix, 2L, 86; liv, 1886.

[12] Chantre, *Mission en Cappadoce*, pl. viii, 3, which is *wheel-made*. It has a strainer spout; an identical vessel is in the Museum at Constantinople.

as well, when it penetrated with the westward movement from Anatolia, with which the Copper Age opens. But the elaborate spiral-designs of certain swords from Transcaucasia in the *Museum für Völkerkunde*, at Berlin, seem certainly to have their antecedents in the Mycenæan civilization.[1] Finally, we must remember that Mr. Wainwright, in his important discussion of the Keftiu people,[2] has made it highly probable that at this time there flourished in Cilicia a civilization characterized by Asiatic as well as by Mycenæan features; that Carchemish, after being destroyed about 1200 B.C., shows Ægean features without ceasing to be Hittite; [3] and that the Philistines betray in their pottery exactly the same double source of inspiration[4] and thus may well have reached Egypt and Palestine from some part of the Southern Anatolian coast.[5]

FIG. 21.—Three vessels from Urmya.

Is it there that we must look for another centre through which the Hittites communicated with the Ægean world ?

But as we have said already, at the beginning of this chapter, the study of these fascinating problems cannot profitably be undertaken in this volume. They represent a further development to a large extent determined by new factors, though, as a whole, based on those earliest interrelations between Asia, Europe and the Ægean, which have been the subject of our present enquiry.

[1] As yet only a short notice in the *Führer* of the *Vorgeschichtliche Abteilung*, p. 25.

[2] *Liverpool Annals*, vi. p. 24 sqq.

[3] Woolley in *Syria*, 1921, 186, and *Liverpool Annals*, vi.

[4] Without wishing to exceed here the scope of this volume, I want to point out that the decidedly strong Mycenæan strain in Philistine ceramics can in no way be derived from Crete, where they find no parallel, while the swan which predominates in their decoration and the occurrence of the bottle, with strainer-spout and handle at an angle of 90° both point to Asia Minor. The doubts as to the accuracy of calling this pottery Philistine, expressed by Mr. Saucey (*Syria*, 1924, p. 169 sqq.) are not well founded ; the quick semitisation of the Philistines, which he admits, explains why their own painted ware soon fell into disuse.

[5] Just now Dr. Valentin Müller publishes a silver *pinax*, actually found in a Cilician cave, which shows an engraving of a man of unmistakably Anatolian, Armenoid type, wearing the distinctive metallic girdle of the Keftiu and Minoans. (*Athen. Mitth.* L, 1925, 63 sqq. with fig. 6*b* and pl. vi, 3.)

Appendix I.—Painted Pottery in the Far and Middle East.

The already famous discoveries of early painted pottery in China, India, and Persia made since the first part of these "Studies" was published, can hardly be passed over in silence, though they are as yet only provisionally published and only to a limited extent available for a first-hand study by European students. Nevertheless, we have here an opportunity to test the soundness of the views previously propounded, and perhaps a chance to elaborate them further. We have referred already to the new material in the opening paragraph of this volume; but those remarks hardly left the domain of generalities, thus only in tenor but not in character differing from most discussions of these wares.

It seems, strangely enough, to be thought that the importance of the new discoveries, already so valuable in themselves, is enhanced by appending to their announcement a confusing array of geographical names, which remind us of widely separated regions possessing fundamentally different civilizations which happen, however, in each case to embrace the art of vase-painting. It is true that this art requires a certain amount of technical knowledge; but I cannot see that at present we are justified in asserting that the requisite knowledge cannot have been acquired two or three times independently in the many thousands of years during which separate groups of humanity struggle forward. That in the case of vase-painting as in others, the limitation of the material which nature puts at man's disposal would inevitably lead to similar solutions in various places could, no doubt, easily be proved by somebody more efficient in higher mathematics than the present writer. As far as vase-painting is concerned, we can only endorse Mr. Childe's view: "As soon as we desert the abstract unity obtained by isolating and emphasizing the one fact of ceramic decoration and envisage instead concrete regional groups of cultures, the incoherence of the whole structure becomes glaringly manifest."[1]

Let us not, therefore, adopt *a priori* either a dogmatic, "polygénisme" or a similar "monogénisme" or "diffusionism," but let us simply consider the various fabrics in detail, as we have done before, and see whether any resemblances appear which are of such a nature as to admit only of interrelation as an adequate explanation. We may revert to this method with the greater confidence because its soundness, as we shall see, has been vindicated by the confirmation of its results through subsequent discoveries. But, obviously, the recent discoveries, only partly published as yet and yearly supplemented by fresh material, allow of no more than a tentative and

[1] Childe, *The Aryans*, p. 109. It is regrettable that the author by entitling a paragraph of his valuable book, "The Vase-Painters," fosters the misconception that such a unity exists.

provisional treatment, which, however, the importance of the problems involved compels us to undertake.

China. We start then with those finds which lie farthest from our field of study, those which Dr. J. G. Andersson made in the province of Honan,[1] in that of Fengtien (South-West Manchuria)[2] and, on the other hand, to the west in the province of Kansu.[3] Dr. J. T. Arne has, in the admirably published *Palaeontologia Sinica*[4] dealt very fully with the Honan pottery. If his description and analysis of the finds are careful, his comparisons with other fabrics are hardly critical. Prof. Hubert Schmidt has been the first to try and specify to which foreign cultures the Chinese pottery shows affinities.[5] He starts with emphasizing the fundamentally different character of the European and the Asiatic painted pottery; then, in a great effort, he attempts to prove that: "die ältesten Kulturen China's und Japans sind Europäischen Ursprungs; ihre Träger sind noch in neolitischer Zeit teils aus Nord Europa, teils aus dem Südosten Europa's, dem Dnjepr–Donau–Balkan Gebiete abgewandert." He points out that the Tripolje spiral, unknown in the Asiatic painted styles, occurs in Honan -never even mentioning the possibility of an independent origin, though we have the sooner to account with this since Adama van Scheltema has so admirably shown its real nature and psychological value as a decorative element.[6] In fact, not a single spiraliform decoration from China or Japan resembles closely those from Central or Eastern Europe. An idol[7] curiously decorated with unconnected S-spirals and little isolated blots goes back, as Schmidt rightly remarks, to a painted prototype. But there is no proof that the prototype was a painted *pot*, the more so as early painted pottery in Japan is extremely rare.[8] And there seems little necessity to derive the incised spirals and meanders of early Japanese ceramics from Central Europe: they look thoroughly exotic except in one or two instances where the fact that the spiral design appears pure and simple creates an inevitable resemblance to certain Tripolje decorations.[9] The pottery from Kansu, published after Schmidt wrote, affords no definite proof in favour of either view. The magnificent and rich spiral designs are[10] continuous and not the unconnected S-spirals of the early phase of the Tripolje pottery. But

[1] J. G. Andersson, "An Early Chinese Culture," *Bull. Geol. Survey of China*, No. 5, 1923.

[2] J. G. Andersson, "The Cave Deposit at Sha Kuo T'un in Fengtien." *Paleaontol. Sinica*, Series D, i, 1.

[3] J. G. Andersson, "Preliminary Report on Arch. Research in Kansu." *Memoirs. Geol. Survey of China*, Series A, No. 5.

[4] J. T. Arne, "Painted Stone-Age Pottery from the Province of Honan." *Paleaont. Sinica*, Series D, vol. i, fasc. 2.

[5] Hubert Schmidt, "Prehistorisches aus Ost Asien," *Zeitschr. f. Ethnol*, 1924.

[6] Adama van Scheltema, *Die Altnordische Kunst*, 80–100.

[7] N. G. Munro, *Prehistoric Japan*, fig. 138.

[8] Munro, loc. cit., 283.

[9] Munro, loc. cit., figs. 74, 107.

[10] Andersson, *Prelim. Report*, pls. vi, ix, 3.

we know from Petreni that these originally unconnected S-spirals may, interlocked, give rise to a design which has the appearance of a continuous spiral-belt though no real coils exist.[1] That, however, the Chinese examples may derive from a real belt of running spirals is suggested by the filling of the rest of the surface which supports the rhythmic movement of the spirals, as in some cases from the Danubian region,[2] and differs therein entirely from the static filling which the Black Earth Region shows both at Petreni and Erösd. Finally, one must not forget that the Chinese pottery is by no means homogeneous, and that the spiral plays only a secondary part in the decoration. In this case these comparisons, based on a few chosen examples, are misleading if ever they are.

Closer resemblance than to Petreni exists in certain cases to Pueblo-pots,[3] or vessels from Neolithic Thessaly[4] or Bronze Age Phylakopi[5] or in the Knossian Palace style,[6] meaningless comparisons of course; for we shall only be able here to separate what is essential and what accidental if we can compare with the well-known *styles* of Asia and Europe a certain number of well-defined Chinese styles, known from a sufficient number of specimens to enable us to distinguish its standard motives from the exceptional devices due to the whim of individual potters.

Equally inconclusive are certain stone knives which Prof. Schmidt adduces as a feature common to Transylvania and the Honan cultures. The most characteristic shapes are peculiar to Europe and Asia exclusively; the perforated type of China[7] never occurs in the Black Earth Region, where the straight-sided and pointed specimens from Priesterhügel are typical[8]; the derivation of the Asiatic and European type from a common "Urform" is therefore a hypothesis which lacks foundation. The common possession of less pronounced and vaguely outlined shapes[9] has, of course, little value as evidence, they have even Predynastic Egyptian parallels; only pronounced forms count in such comparisons.

Besides, there is an isolated clay stamp or pendant with an incised spiral.[10] It can be paralleled from the Black Earth Region—but in Japan no painted pottery is found and the peculiar incised spiral decoration in ceramics seems there, as we already

[1] Trudy, *Arch. Siezda*, xiii, pls. iii, 6; vii, 1; x, 11, 12.

[2] E.g. *Zeitschr. fuer Ethnol.*, 1903, 447, fig. 25 (our Pl. II, 14).

[3] Cf. Andersson, *Prelim. Report*, pl. ii, with our fig. 1, left-hand side.

[4] Cf. Andersson, *Prelim. Report*, pl. 1, 2*b*, with Wace and Thompson, *Prehistoric Thessaly*, 45, top.

[5] Cf. Andersson, *Prelim. Report*, pl. ix, 2 with *Phylakopi*, pl. xiii, 19.

[6] Andersson, *Prelim. Report*, pl. viii, "stylized octopus."

[7] Andersson, *Early Chinese Culture*, pl. 1; survivals in iron. Ibid, pl. ii. Also Tori's *Populations Préhistoriques de la Mandchourie Méridionale*, fig. 29; pls. x, xi, xiie.

[8] Teutsch, in *Mitth. d. Praehist. Kom.*, 1903, p. 367, fig. 2.

[9] *Zeitschr. f. Ethnol.*, 1924, loc. cit., fig. 10.

[10] Munro, loc. cit., fig. 121.

said, completely un-European and native. We may just mention that the Japanese pottery shows sometimes on the surface not occupied by the designs mat-impressions. This is also found in China and, as Dr. Andersson noted already, derives from the support or mould in which the pots were made.[1] It was sometimes not completely obliterated, even if new designs were added, because as in early Chinese bronzes, the æsthetic value of the contrast between the shiny, polished band-designs and the finely patterned surface between was fully appreciated. It seems, therefore, extremely difficult to combine these wares with some very rough and primitive pottery found near Berlin and other wares from Norway, Central Russia, and even Siberia, which are partly *decorated* by impressed ropes, etc., partly by "combed" designs, as we know from Palestine; in Russia the *whole vessel* is covered with impressions caused by some textile support on which they were manufactured. But it may be even questioned whether one is justified in combining the various wares which are found over so wide an area in Europe.

I have, for completeness' sake, mentioned this last matter because Prof. Schmidt propounds a twofold assumption: from the Baltic region the makers of the "Mattenkeramik" marched eastwards; from the Black Earth Region those who painted their vessels with spirals and meanders. With their families they must have "trekked" over a distance of about one-third of the earth's circumference in sufficient number to set their stamp on a civilization at the extreme end of the Eurasiatic continent, which was in its main features already Chinese.[2] The reason for such an immense continuation of a "trek" through fertile regions, which even now lack a population able to use its soil to the full, defies understanding as also the ultimate arrival of the trekkers with their industries intact (which suggests an ethnological void over the whole route) and even uncontaminated by mutual intersection, though they went the same road for centuries; for the mixture of the two industries would have occurred in Japan only secondarily. It seems to me that, if one visualizes the realities which it would imply, such a construction could only be accepted on the strength of overwhelming and coherent evidence, which as yet cannot be said to exist. In fact, the anthropological evidence admittedly does not tally with the theory. One has, of course, to thank Prof. Schmidt for his courage in putting it forward, as in these cases where we have to face entirely new evidence even a wrong but definitely shaped view facilitates further research.

Before leaving China we must reconsider for a moment the possibility rejected by Prof. Schmidt but maintained by Dr. Anderson, that the newly discovered pottery is related to Middle Asiatic fabrics. Here again the evidence hardly suffices to prove any definite connections, and in such cases it is, to my mind, the safest and also the most probable view, that we have to deal with an independent development.

[1] Andersson, *Early Chinese Culture*, 28.

[2] Andersson, loc. cit., 32, and *Prelim. Report*, p. 42 sqq., quoting Dr. Tallgren, and 46 sqq.

The use of black designs on a white slip which only partly covers the vessel was known in Anatolia in the middle of the Second Millennium, but is there, as we have seen, explicable as the outcome of an admixture of styles, and the designs do not resemble these found in China. The Chinese habit of putting blots on the points where straight lines meet[2] is entirely unknown further west. The typical use of red bands bordered by black of Northern Syria (and Susa II) does not occur at Honan, which, however, stands alone with its loosely thrown-in small motives.[3] One could continue this tiresome account of unparalleled features. Let us realize that those which the Asiatic fabrics possess in common are almost without exception such as arise unavoidably when geometric designs are used at all, triangles joined at the apex,[4] cross-hatched bands, etc. The "feel" of the Chinese decoration is, however, quite peculiar, though such a thing is well nigh impossible to demonstrate[5] as long as the material does not enable us yet to define its *style* properly. At first sight one is inclined to attach somewhat more importance to rows of stylized birds from Sha Ching, which are considered to point to Susa I.[6] But could one abstractly render a bird in any other way? In fact, identical rows of birds occur in Dipylon ware. The reddish coarse ware and the red paint also differ totally from Susa and, finally, Dr. Andersson objects to the equation that these sherds belong to his youngest period and therefore are much younger than Susa I.[7] Nevertheless we shall have to refer to this last matter again after having reviewed the pottery from the Middle East.

Mesopotamia.

The recent excavations at Kish and Ur have entirely confirmed the conclusions at which we arrived in Part I. The sequence of fabrics now tentatively suggested by Mr. Woolley shows the separation which exists between the early fine wares which are descendants of Susa I and the polychrome ware of North Syrian affinities used as far south as Susa II.[8] The two classes are never found together, but it seems that we have to modify our view, which was correct in 1924, that neither of them is found with remains which we are entitled to call Sumerian. For it seems that at Jemdet Nasr, near Kish, Prof. Langdon has found earlier Sumerian remains than any known hitherto.[9] And with them appeared the polychrome pottery

[1] Arne, loc. cit., pl. iv, 10, 11; v, vi.

[2] Arne, loc. cit., pl. iv, 11; v, 12; 14; ix, 33; xiii, 63.

[3] Arne, loc. cit., pl. vii, 18, 20; viii, 27A; ix, 30.

[4] Arne, loc. cit., pl. iv, 11; vi, 15 (uncertain); xi, 52; xii, 60.

[5] But see the quite peculiar Chinese brush technique of, *e.g.* Arne, pl. i, 4.

[6] Andersson, *Prelim. Report*, pl. xi, 1, 2.

[7] Andersson, loc. cit., p. 41, note and diagram on p. 23.

[8] See Mr. Woolley's forthcoming publication on Ur-pottery; he suggests the following sequence: Tell el-'Obeid I (descendants of Susa I.—H.F.), Kish I (related to North Syria and Susa II.—H.F.), Kish A cemetery (development of Kish I, and forms preluding on later Sumerian types.—H.F.), Tell el-'Obeid II (earliest Sumerian remains at Ur, from the time of Mesanni-padda, about 3100 B.C.).

[9] *The Times*, January 13, March 1, 1926.

which at Assur just preceded in time the earliest Sumerian temple.[1] This result is the more important as the few published examples from Kish—as at Susa II found together with theriomorphic vases[2]—appear to belong to the very same class of pottery: they show the same sharply set-off shoulder, the flat rim, the short neck, and simple geometric polychrome designs. The new evidence is thus entirely in keeping with that from Assur, where the earliest temple shows a Sumerian civilization in the stage which was reached at Lagash in the time of the earliest patesi's. For the painted pottery, which precedes at Assur the earliest temple, is found at Jemdet Nasr with Sumerian remains antedating the earliest patesi's; and at Fara, where the remains are slightly more archaic than at Assur but apparently younger than Prof. Langdon's finds, we find only traces of the polychrome pottery.[3] If we have thus been able to advance a little in the earliest history of Mesopotamia, we still find its population in that earliest period consisting of two elements, one of which is Sumerian proper, as the tablets show; the other is represented by the polychrome pottery, a particular kind of pigtail fashion and architecture, and has North Syrian affinities.[4] But the connecting link with the people who made the earliest fine pottery is still not found.

Seistan.

Other recent discoveries, however, allow us to advance somewhat towards the solution of that problem as well. Till now Susa I. with its descendants at "Musyan" and Tell el-'Obeid, remained quite isolated. Sir Aurel Stein's finds in Seistan have revealed now that its domain extended all through Southern Persia, and we can follow it up into Baluchistan.[5] The pottery from Seistan possesses some geometrical designs in common with that from Susa I, but more numerous are the resemblances with the decoration of the "poterie fine" from Musyan[6] and that of Tell el-'Obeid.[7]

[1] Andrae, *Die archaischen Ischtartempel*, 16, Frankfort, Studies, I, 62 and Pl. pl. viii, 1–4.

[2] *Illustrated London News*, Sept. 4, 1926, p. 395.

[3] Frankfort, "Studies," I, 59, with notes 5, 6.

[4] Ibid., p. 69 sqq., 88 sqq. Prof. Christian, in his review (*Mitth. d. Anthrop. Gesellsch. Wien*, liii, 66) objects to my calling them Semites, because they are brachycephalic. Indeed, we are dealing with cultural units which often coincide neither with philological nor with anthropomorphic groups.

[5] Pending the publication of *Innermost Asia*, the pottery is provisionally discussed by Mr. Fred. H. Andrews, in the *Burl. Mag.* Dec., 1925.

[6] Compare *Burl. Mag.*, 1925, p. 306–7, Nos. 13, 15, with *Mém. Dél. en Perse*, viii, figs. 143, 145; *Burl. Mag.*, loc. cit., Nos. 22, 25, with *Men.*, loc. cit., fig. 158, and *Mem.*, xiii, pl. xvii, 6; *Burl. Mag.*, loc. cit., No. 70, and perhaps Nos. 1–5, with *Mem.*, viii, fig. 161 right, and *Mem.*, xiii, pl. ix, 5, 9; *Burl. Mag.*, loc. cit., 30, with *Mem.*, viii, fig. 165; *Burl. Mag.*, 32, with *Mem.*, viii, fig. 166, left; *Burl. Mag.*, loc. cit., 9, with *Mem.*, viii, fig. 153; *Burl. Mag.*, loc. cit., 3, 3–36, with *Mem.*, viii, fig. 177; *Burl. Mag.*, 18–20, with *Mem.*, xiii, pl. v, 4; vi, 4, etc.; *Burl. Mag.*, loc. cit.,1, with *Mem.*, xiii, pl. xix, 9, and pl. xxii, 2, etc.; *Burl. Mag.*, loc. cit., 72, with *Mem.* xiii, pl. xix, 8; xxi, 3, 6.

[7] As Mr. Woolley's final publication is still in the press we can only refer to Dr. Hall's preliminary report, in *Journ. Egypt. Arch.*, viii, pl. xxx, with which is to be compared *Burl. Mag.*, loc. cit., Nos. 9, 13, 15, 31.

Even the remarkable thinness of fabric is observed in some of the Seistan specimens. Though our comparisons refer to geometrical designs only, they are too detailed and too numerous to be gratuitous. Now we have shown that this pottery from Musyan and Tell el-'Obeid is but a later stage of the fabric we know best from Susa I[1]; the same conclusion must then, no doubt, be made as regards Sir Aurel Stein's new finds.

But if the pottery from Seistan is, on the whole, descended from Susa I, there appear a few animal representations which are so closely paralleled at Susa II that they must belong to that later culture.[2] The stylistic affinities of these two sherds are quite obvious, and no connection with the first style would be conceivable; but, in addition, we may point out that the first style appears in Seistan in a stage in which natural representations have become obsolete. For the series of motives, first compiled by Abbé Breuil,[3] shows, as is well known, how the abstract natural representations of Susa I tend to become stylized till only geometrical designs are left. This process can be observed at Susa itself, at Tepeh Khazineh and the other "Musyan" sites, where the distorted transitional stages far outnumber the earlier purer ones. When the pot-painters arrive in Southern Mesopotamia they have lost all traces of the natural representations from their repertoire and only work with geometrical designs. In Seistan we meet them in the same stage of development: except for the two sherds under discussion, there are neither natural representations nor even the weird distortions of the transitional stages known from "Musyan." Thus the isolated appearance of the two sherds with goats, as well as their close analogies to examples from Susa II, obliged us to consider them as importations from that city, through which Persia, and perhaps even regions further east, communicated with the civilizing West, Mesopotamia. Our stylistic argument is well confirmed by Mr. Andrews's observation, who, for technical reasons, considers one of the sherds as an importation in Seistan. They would thus only be eastern counterparts of the vase with birds importated from Susa into Lagash.[4]

Nevertheless, their occurrence in Seistan raises a most important problem—namely, whether in Persia the "first style" enjoyed an undisturbed development: while in the West, at Susa and in Mesopotamia, the changes took place which brought about the rise of the "second style." For the Susian importations in Seistan show that Sir Aurel Stein's finds either cover the period of both the First and the Second City at Susa, or are all contemporaneous with Susa II, in which case we can no longer maintain that a period of desertion caused by drought intervened between the

[1] Frankfort "Studies," I, 54–59.

[2] *Mém. Dél. en Perse*, xiii, figs. 139-146, with *Burl. Mag.*, loc. cit., 80; *Mem.*, loc. cit., figs. 149, 152, with *Burl. Mag.*, loc. cit., 81.

[3] *Comptes Rendus de l'Academie*, 1905, p. 105 sqq.; *Comptes Rendus du XIII. Congrès Intern. d'Anthr. et d'Arch. préhist.*, Monaco, 1906.

[4] Cros Heyzey, *Nouvelles de Telloh*, 310, fig. 20.

two settlements at Susa. But the homogeneity of their decoration would never have led us to suspect that it corresponds in time to the two stages at Susa, though the latter fact explains the differences in quality which can be observed in the Seistan pottery. But the fundamental difference which we have shown at length to exist at Susa between the first and the second style[1] seems not to exist further east. Now this is easily explicable; for we have seen that the contrast between Susa I and II is caused by a predominance of Syrian elements in the latter,[2] and it now appears that Susa has been its most eastern point of advance.

North Syria. It has been customary to consider Anatolia and North Syria as more or less closely united, and we have till now endorsed that view provisionally. But the material discussed in the present volume leads to a different opinion: the North Syrian civilization seems to have been peculiar to the plains and the hills which form the middle part of the "Fertile Crescent." The Anatolian peninsula to its north, the Armenian–Persian mountain-land to its east stood apart; the first possesses from the beginning monochrome black and then red wares,[3] while we know that at Sakjegeuzi, which lies on the border of the Anatolian and the North Syrian cultural provinces, these wares are from the very earliest intermingled with polychrome painted pottery. On the other hand, the Armenian-Persian high-land used painted wares with black designs,[4] and we do not know whether these originally belonged to Cappadocia as well. Probably northern, and possibly southern, Mesopotamia as far as Fara may have been included in the North Syrian province with painted pottery from the beginning. But further south, *e.g.* at Susa and Tell el-'Obeid, it certainly is only secondary, just as in the west its descent into Palestine and Middle Syria; for in all these cases we know of the existence of an earlier civilization.[5]

Armenia and Persia. Here we have treated the Armenian–Persian highlands as one cultural province, but any such arrangement must, at the present moment, remain tentative. Nevertheless, the very scanty material which we possess from that extensive region exhibits some features which can be interpreted as supporting our hypothesis. We have

[1] Frankfort, "Studies," I, 25-29; 40-47.

[2] Ibid., 69-75.

[3] *Vide supra*, ¶9 and ¶22.

[4] *Vide supra*, p. 157.

[5] *Vide supra* ¶11. The contrast between North Syria as part of the "fertile crescent" and Anatolia can already be traced in a few more phenomena, disconnected as yet because our knowledge of these civilizations is so fragmentary, but nevertheless significant; the "champagne-glasses" of the "Early Hittite" graves (*Liverpool Annals*, vi., pl. xix) related to the Palestinian calices (*Annual Palest. Explor. Fund*, II, pl. xxi) are not found beyond Taurus. And though a few painted sherds show that there existed a greater unity in the palmy days of the Hittite empire than ever before or after, there is a typically Syrian painted ware (e.g., *Liverpool Annals*, vi, pl. xxvi, c, d) which is found occasionally in Mesopotamia (specimens in the Vorderasiat. Abt. Berlin) but never in Anatolia.

found red pottery imported into Susa I and partly produced there, according to the foreign technique, and we have seen above that this technique is typical of the regions from Anau I to Cappadocia. The earliest pottery from Anau displays what may be called the Cappadocian "Rautenstil" in a primitive stage, in black or polished red; from the beginning there are at Anau light-coloured fabrics as well as red wares; and thus the Cappadocian and the later pottery from Anau can be considered further developments of varieties of one stylistic province, the more so as in Seistan we find a few parallels with Anau I,[1] as well as with Mohammedabad and Anau III.[2] Again, Anau II[3] seems not unrelated with the Cappadocian Hittite pottery and the early ware from Samarra would then no doubt be an off-shoot of that culture to the west.[4] There is no proof as to the date of the latter, but the character of the pottery suggests perhaps that it intruded into Mesopotamia in the time in which the North Syrian, or even perhaps the succeeding Sumerian civilization dominated the valley of the Two Rivers.[5] As a matter of fact, the evidence on which we base the assumption that any such cultural province existed is slight, and, at best, pertains to anthropological archæology, but does not yet allow of any historical conclusions.[6]

India.

How far towards the East this early civilization of the Persian Armenian highlands extended is hard to say. It is interesting to note, in regard to the connection which is claimed to exist between the newly discovered Indian remains and Sumerians, that at Mohenjo Daro *unpainted* pottery is common and that the shapes seem not

[1] *Burl. Mag.*, loc. cit., No. 85, with Pumpelly, "Explorations in Turkestan," I, pl. xxiv, 5; *Burl. Mag.*, loc. cit., 21, with Pumpelly, loc. cit., pl. xxiii, 2; *Burl. Mag.*, loc. cit., 70, 72, with Pumpelly, loc. cit., pl. xxvii, 2.

[2] *Burl. Mag.*, loc. cit., No. 22, with Pumpelly, loc. cit., pl. xx, xxxv, 7 (also 2, 5) and Centenary Suppl., of the *Journ. Roy. Asiatic Soc.*, pl. xv., 9; pl. xvi, 6.

[3] *E.g.* Pumpelly, loc. cit., pl. xxxii.

[4] Frankfort Studies, I, 60-61. Centenary Suppl., *Journ. Roy. Asiatic Soc.*, pl. xiv, 3, 4; xv, 1-8. Especially the fringed bands of pl. xiv, 3, 4, and the top-triangles of 3, and further, those of pl. xv, 4, 5, 7, suggest a relationship as does the style of the natural representations.

[5] The persistence, throughout a large province, of the culture known from Susa I could explain how notwithstanding the discontinuity observed at Susa, the second civilization there, though of different origin, could absorb some elements of the first because they may have overlapped elsewhere. As such we may understand the occurrence at Jemdet Nasr of a small sharp shouldered pot with four lugs, not unlike those from Susa I. (*The Times* of March 1, 1926) and perhaps the occurrence at Susa II of the sloping-oval motive (*Mém. Dél. en Perse*, xiii, pl. xxiv, xxv, 5; xxvii, 1; xxviii, 4). But these facts are of so little account that it is perhaps unnecessary to assume the overlapping at all, which as yet has not been observed in any actually excavated site. It need hardly be said explicitly that the fundamental and thorough difference between the First and the Second Susian civilization are not affected at all.

[6] *Vide supra*, ¶1, and on the impossibility of connecting Susa and Anau directly, "Studies," I, pp. 76 sqq. The finds at Seistan allow us to go one step further in connecting up the various Armenian and Persian fabrics but the local differences must never be lost sight of and it may appear that our generalizations have been premature.

unrelated with the Sumerian vessels which, as we know, were hardly ever painted.[1] The few painted vessels from India seem, as far as photographs allow one to judge, to be of a much more advanced ceramic stage than the pottery of Susa I and its homologues.[2] From Baluchistan, painted pottery is known which seems to fall into two classes. One, of apparently later type, wheel-made and polychrome, is mainly found at Nal, in Eastern Baluchistan,[3] and it may appear that certain painted wares from Mohenjo Daro, in the Indus valley, belong to this family.[4] The other group seems to contain earlier pottery; it is best known from Tell Kaudeni, near Fort Sandeman, in the Zhob valley in North-Eastern Baluchistan.[5] They were found together with chert implements and a copper or bronze axe of simple type. The painted pottery may conceivably belong to the Persian–Armenian province. With Seistan it has in common the motive of a sloping oval, hatched or cross-hatched,[6] and further, some suggestions of the first Susian style and its descendants.[7] The occurrence of lapis lazuli points to intercourse with Persia or Afghanistan while agate and remains of a statuette, which, as Noeteling cleverly recognized, represented an elephant, points to India.[8] And thus it may be that further discoveries of Sir John Marshall and his collaborators will reveal a still closer connection between the Indus valley and the Middle Asiatic culture. In claiming the existence of a more or less homogeneous Armenian–Persian cultural province, we have already left the solid foundations on which we had based the other groupings, viz.: Seistan–Susa I–Tell el-'Obeid, and North Syria–Assur–Kish–Susa II. Still, some evidence seems to justify the putting forward of the hypothesis, but with what follows we frankly enter the realm of imaginative construction. So many comparisons, however, between the Chinese and Near-Eastern ceramics have been made already, that we may venture to add one to their number which appears to have escaped notice.

Dr. Andersson has already published a table with motives common to Honan and Anau I[9], and Mr. Percival Yetts[10] and Prof. L. Franz have endorsed and elaborated

[1] Especially *Illustrated London News*, March 6, 1926, p. 400, fig. 15. But also ibid., fig. 16 and ibid., Oct. 4, 1924, p. 615, fig. 3; Sept. 20, 1924, p. 531, right-hand side second from top. For very convincing proof of connection between India and Mesopotamia in early Sumerian times: E. Mackay, *Journal Royal Asiatic Society*, 1925, 697, sqq.

[2] This is very much the case with the vessels (*Illustrated London News*, Sept. 20, 1924, p. 531, bottom row) with their very differentiated (wheel-made?) shapes.

[3] *Arch. Survey of India, Annual Report*, 1904-5, pp. 105 sqq., pl. xxxiii, xxxiv. *Illustrated London News*, Mar. 6, 1926, p. 400, figs. 8-14. Copper tools ibid., Feb. 27, 1926, p. 348, fig. 10.

[4] *Illustrated London News*, Sept. 20, 1924; p. 531, right-hand side, third from top.

[5] *Zeitschr. f. Ethnol.*, 1898, pp. 460 sqq., and, perhaps, *Illustrated London News*, Sept. 20, 1924, top row.

[6] *Zeitschr. f. Ethnol.*, loc. cit., figs. 20, 21, 30, 31, 40. *Burl. Mag.*, loc. cit., Nos. 42, 45, 52-54.

[7] Especially *Zeitschr. f. Ethnol.*, loc. cit., figs. 22, 30, 33.

[8] Ibid., p. 470.

[9] Andersson, *Early Chinese Culture*, pl. xiii.

[10] *Burl. Mag.*, Dec., 1925, p. 308 sqq.

his views : the latter has even drawn up an absolute chronology on the basis of these comparisons.[1] We may note that the sloping oval known in Seistan is common in Honan,[2] while it occurs once in the Tripolje culture on a vase[3] which is in no way connected with the usual decoration of the Black Earth Region, and which, as we have seen, belongs to an archæological context in which signs of intercourse with the East are numerous.[4] To these possible indications of intercourse between the Far and the Middle East we may now add yet another.

Dr. Andersson found at Sha Ching, on the border of Mongolia and Kansu, two sherds with rows of conventionalized birds which he and Mr Yetts compare with Susa I : they belong to the Metal Age.[5] They were decorated in red paint on reddish ware. Unless one has seen the sherds it is hard to give an opinion ; but it deserves notice that this technique is twice found within the Middle Eastern province of which Susa I is the most famous exponent, and that in these instances the designs resemble those of the Chinese examples as well. In the first place a few sherds from Tepeh Mohammed Djaffar and Tepeh Musyan are to be remembered here[6] : and secondly there is a most remarkable vase in the " Vorgeschichtliche Abteilung " of the Museum für Völkerkunde, Berlin, from either Tepeh Digalla or Gök Tepeh, near Urmya in Armenia (fig. 21b).[7] Its archæological context is not clear ; from the same *tells* come two beak-spouted jugs of the type also known from Anau III and a cylindrical pot-stand with oblong vertical slits in its sides. The painted vase suggests by the primitiveness of its shape that it belongs to a considerably earlier date than the beak-spouted jugs. But for the whole of the finds from these mounds the absence of iron is significant, because it was used in these regions quite copiously at an earlier date than its general application in the Near East, and this negative evidence as to the Bronze Age is corroborated by the occurrence of enormously heavy rings of copper or bronze, actually weighing $15\frac{1}{2}$ or $16\frac{1}{2}$ kilogrammes, which may well be " pigs." The decoration of our painted vessel differs in its character completely from the naturalistic style prevailing in Syria and at Susa II, but it seems related to the abstract style of Susa I, Samarra and, to some extent, to the Chinese sherds referred to above. It is perhaps not accidental that at Sha Ching, at Tepe Mohammed Djaffar, and at Urmya horizontal rows of massive triangles are conspicuous.

Thus it seems that occasionally there appear in China, Armenia, and South-Western Persia pot fabrics which present similarities in style of decoration as well as in technique ; in the two first cases and possibly in the third as well they belong to a Bronze or Copper Age context. May one surmise that the centre of metallurgy

[1] *Mitth. Anthrop. Gesellsch. Wien*, 1924, p. 82.
[2] Arne, loc. cit., pl. v, 12-14 ; pl. ix, 35.
[3] Trudy, viii, pl. xxviii, 10.
[4] *Vide supra*, p. 34, n. 10.
[5] Andersson, *Prelim. Report*, pl. xi, 1, 2 ; and p. 41, n. 1.
[6] *Mém. Dél. en Perse*, viii, figs. 133, 134.
[7] *Zeitschr. f. Ethnol.*, 1900, p. 609 sqq., and pl. ix. Ibid., 1898, p. 525 sq.

near the Caucasus, which we have found to have been of momentous importance for the Near East also affected the Far East and was at least sufficiently in contact with those further regions to enable certain decorative motives (by some medium or other) and perhaps a certain ceramic technique to spread ? If further research, which has in the first place to disprove or substantiate this tentative combination of widely separated fabrics, should disclose in addition that there are detailed resemblances between Chinese pottery on the one hand and the Persian and Baluchistan wares on the other (while there is also the one exceptional vessel from Tripolje to account for) then this distribution would certainly suggest a centre of diffusion somewhere to the west of the Pamir and the Hindu Kush and to the south of the Caucasus and the Caspian Sea. Even then the question whether pot-painting in general spread from one centre need not be touched upon at all, nor need displacement of peoples on any large scale be implied. Trade which opens up the roads and the minor migrations which take place at all times and are often hardly perceptible in their ultimate results, these perhaps could account sufficiently for the facts. But our material is too scanty as yet, and though it may be useful to map out as it were tracks which may be explored by future research, it is only this future research which will be able to decide whether those tracks lead anywhere at all. The only method, however, which may result eventually in a larger synthesis is the one which definitely maintains the distinct characteristics of all the small units such as they are revealed in their peculiarities by exploration ; and no haphazard or arbitrary combinations, based on isolated similarities, but rather the utilization of coherent groups of phenomena must guide our preliminary steps if we are to avoid schematizing the endless complications of reality to such an extent that the result will no longer bear any relation to truth whatever.

Appendix II.—Obsidian.

At first sight it would seem that we possess in obsidian a most valuable material for our inquiry into early trade relations ; for it is easily recognizable and occurs only at a few places within the purview of the Ancient World. I therefore collected chips whenever I had an opportunity to do so while visiting ancient sites ; and I received further specimens from Sicily and Pantelleria, Malta, and Corinth, by the kindness of Prof. P. Orsi, Prof. T. Zammit and Mrs. L. A. Walker Kosmopoulos. Dr. G. T. Prior, Keeper of Minerals at the British Museum of Natural History, most kindly

undertook a microscopic examination of thin sections of my little collection after Mr. D. H. Mountain, of the department, had determined the density and refractive index. To all these scholars who so willingly furthered this research the thanks of those interested in the early history of civilization are due. The following table gives the results of these investigations, the "remarks" being contributed by Dr. Prior.

Provenance.	*n*.	G.	K.	Remarks.
1. Abydos, Upper Egypt...	1·532	2·56	0·208	Not examined under microscope.
2. Pantelleria	1·519	2·50	0·208	Dense with microliths (skeletal felspars and needles of aegyrine).
From other sources :—				
3. Pantelleria	1·508	2·45	0·207	
4. Rocche Rosse, Lipari	1·488	2·37	0·206	
5. Matrenza	1·485	2·37	0·205	Shows minute dark needles parallelly arranged and a few felspar and hornblende microliths.
6. Malta	1·482	2·37	0·205	Dusty, with minute needles of augite and a few larger needles of hornblende.
7. Corinth	1·484	2·37	0·205	Dense, with dusty material with skeletal crystals of felspar and a few needles of hornblende; flow-structure.
8. Chæronea	1·486	2·37	0·205	Like 7 but flow-structure more pronounced, streaky with light and darker brown bands.
9. Gonia	1·485	2·37	0·205	Similar to 7, hornblende needles distinct.
10. Tiryns	1·485	2·37	0·205	Similar to 9.
11. Dhimini	1·485	2·37	0·205	Similar to 7, but without flow-structure.
12. Melos	1·484	2·37	0·2042	

n = refractive index. G = density. $K = \frac{n-1}{G}$ = specific refractivity.

A warning from Dr. Prior must precede the discussion of these results: "The difficulty about specimens of obsidian is to find any really distinguishing features; for as regards inclusion of air-bubbles or incipiently crystallized minerals (microliths) the same mass might vary very much in different parts. To try to distinguish obsidian from different localities by the presence or absence of such inclusion might be rather

misleading." However, in the table we have also the density and refraction, and the various indications combined seem to justify some provisional conclusions.

The *Egyptian* specimen stands apart. It is of particular interest as its date is fixed beyond doubt. I found it in the Egypt Exploration Society's excavations at Abydos in 1925, in a protodynastic grave (1606). Now obsidian is rare in Egypt. But if the other finds conform to our specimen, it seems highly probable that its source is *not* Melos, as is generally asserted, and perhaps not even Mediterranean. Its refraction and density are higher than even those of the Pantelleria specimens. It appears to the naked eye to be relatively clear. It is highly desirable that more specimens *of this period*, found in Egypt, should be examined in order to determine their source of origin.

The other specimens do not call for much comment. Dr. Prior confirms what archæologists supposed, namely, that the *Sicilian* and *Maltese* obsidian may well have come from the Lipari islands; for between those specimens he sees "some resemblance." Dr. Prior groups them together under the heading "fairly clear and not crowded with microliths." To these he opposes the *Greek* specimens as cloudy and "dense with microliths." These he finds to have "a great family likeness" and are "certainly strikingly similar to obsidian from the island of Melos." When I suggested Hungary as an alternative source Dr. Prior replied: "Some Hungarian obsidians are certainly cloudy with microliths like those from Melos in appearance, but I have found no Hungarian specimen in our collection to resemble your obsidians so closely as the Melos obsidian does."

It is satisfactory that the archæologist's suppositions are thus corroborated by objective facts, and in conclusion I want again to express my gratitude to Dr. Prior whose kind assistance made this test possible.

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INDEX.

I.—GENERAL.

(N.B.—This supplements pp. v–vii.)

African features in the Eastern Mediterranean, 55 sq., 95 sqq., 98 n. 3; 134, 135 n. 5.

Alpine man, 4, 14, 25 n. 1; 33 n. 4; 59.

Amphoriskoi, 77, 81 sq.

Ansa bifurcata, 132.

Ansa cornuta, 34, 51 n. 2; 132.

Anthropomorphic vases, 36 n. 1; 57, 58 n. 2 (*c*); 70, 106, 167.

Archæological classifications, 124.

Arrowheads, 95 n. 6; 97 n. 2.

Askos, 58 n. 2 (*d*); 115, 127, 114 n. 1.

Axe, Asiatic: in protodynastic Egypt, 9 n. 1; in Ukraine, 34 n. 10; in Crete, 94 n. 4; in Baluchistan, 188.

"Bandkeramik," see Ribbon-style.

Beakspouted jug, 58 n. 2 (*a*); 86, 113, 114, 156, 177.

Beard, 95 n. 5; 97 n. 4.

"Blacktopped" pottery, 84 n. 2.

Body-painting, 50 n. 1; 95 n. 1.

"Bridged-over" handle, 51, 132.

Bronze-age, 147 sqq.

Burnish-decorated pottery, 30, 62, 74, 88.

Camel-bones, 34 n. 10; 103 n. 1 end.

Carboniferous pottery, 24, 27, 63 sqq., 73, 80, 89, 108 n. 2; 141 n. 2.

Caucasus, resemblances with Crete, 147, 177; with Hissarlik and Europe, 148, 175; with Egypt, 149; *depot* found at Byblos, 149 n. 5.

Chronology, Near Eastern, 100 with n. 5; 101 sqq., 119; archæological classification and, 124 sq., 146; technical characteristics, doubtful evidence for, 67 n. 1; 68 n. 1; 144 n. 1; metal objects, doubtful evidence for, 106 n. 9; 143, 148 n. 2; Egyptian, 102 sq., 120 sq.; Cretan, 123 with note 4; 125 n. 1; 136 n. 1; Cycladic, 124 n. 1; 145; Mainland, 125 n. 1; 146; Trojan, 134, 152 n. 2.

Collar-necked vases, 58 n. 2(*c*); 87, 108 n. 1; 113, 127.

"Comb-faced" ware, 74, 182.

Concentric circle design, 82 n. 1; 123, 159, 163 sqq.

Copper: copper age, 5; copper-working spreads from one centre, 119, 120, 147 sqq., 189 sq., earliest, in Asia and Egypt, 7 sqq.; in S.E. Europe, 33 sq., 110; in Thessaly, 41; in Central Greece, 44, 52; at Vinça, 46; in Cyprus, 79; in Sicily, 131; in Transcaucasia, 189 sqq.

"Corded" ware, 44 n. 1.

"Cream" ware, 76.

Crete: chronology of, see Chronology; neolithicum, 53, 100 n. 1; subneolithicum, 88, 93, 101, 114; African features, 55 sq., 95 sq., 98 n. 3; 134 sq.; Danubian features, 54 sq., 115, 117, with n. 6; Cypriotic features, 99; Cycladic features, 114 sqq.; Syrian features, 92, 99; age of palaces, 136; Vassiliki ware, 90 sqq., 156; Kamarès ware, 88, 93, 117, 149 sq.; colour-palettes, 95 n. 6; divergent development with Cyclades, 109 sq.

"Crusted" ware, 27, 45.

Dagger: in Egypt, 8, 9 n. 1; in the Ægean and Asia Minor, 106 n. 9.

Danubian civilization: of mixed population, 25 n. 1; in Macedonia, 31 sq., 41, 46; in Phocis and Boeotia, 42 sqq., 114; in Thessaly, 44 n. 3; 47 n. 5; at Vinça, 46; in Crete, 54 sq., 115, 117, with n. 6; in Leukas, 128, with n. 4; meaning for Greece, 52.

Egypt: chronology of, see Chronology; copper in, 5, 7 sqq.; bronze in, 149; Sumerian influence in, 9, 97, 120; protodynastic refugees in Crete, 96 sqq.; influence on Cretan vase shapes, 87 n. 1;

88 n. 4; 102 n. 4; Libyan Delta State, 97 n. 5; 121; Badarian pottery, 54; black-topped pottery, 84 n. 2; wavy-handled pottery, 73 n. 2; foreign pottery from Royal Tombs, 74 sqq.; New Kingdom pottery, 166 sq., 168 n. 3; Egyptian pottery in Boghazkeui, 155.
Eyelet-pins, 149, 167 n. 4.
Eteocretans, 100, with nn. 1, 2.

First Intermediate Period, 83, 96 n. 2; 99 n. 1; 122 sq.
Free-field style, 18 sqq., 37 nn. 2, 3; 40, 129 n. 7.
'Fruitstand," 60 n. 2; 132.

Geometric designs, ambiguous evidence of, 2 n. 1.

Immigrants show hastened sequence of development, 37 n. 3; 89 n. 8; 90.
Indo-Europeans, 100 n. 1; 105 n. 1; 153, 158, 169.

Kamarès ware, see Crete.
Keftiu, 178.
"Kerbschnitt," 47.
Knobs as ornamentation: in Thessaly, 11 n. 1; in Tripolje culture (bosses), 22; in the Danubian civilization, 27 sq., 31; in Central Greece, 42 sq.; at Troy, 58 n. 2 (*c*); in Leukas, 128.
Kydones, 100 n. 1.

Macedonia: neolithic remains, 12; oldest Danubian layer, 31, 33, 41; incised wares, 39; later Danubian layer, 46 sq.; late off-shoot into Thessaly, 47 n. 5; 172; common feature with Crete, 115; homeland of Phrygians, 171 sqq.
"Mattmalerei," see Mat-painted wares.
"Mat-painted" wares, 12 sqq., 137 sqq., 139 n. 7.
Mediterranean man, 4.
Metal vessels: influence on pottery, 11 n. 1; 66, 67, 68 n. 1; 86, 107 with n. 8; 116, 142, 143 n. 1.
Metope style, 19, 63.
"Mottled ware," see "Vassiliki ware."
"Minyan ware," 140 sqq.

Naturalism and skeuomorphic designs, 3 n. 3; and realism, 4 n. 1.
Neolithicum, characterized by predominance of local features, 3, 16; in Palestine, 6; in Egypt, 8; in Greece, 11; in Crete, 53 sqq.

Palestine, neolithicum, 6; remains "telescoped," 72; Hittite pottery in Palestine, 168.
Palettes, 95 n. 6.
Parti-coloured bowls, 64, 79, 84 n. 2.
Philistines, 178 n. 5.
Pile-dwellings, 51.
"Pilgrim-bottles," 58 n. 2 (*e*); 155.
Potters' wheel, 67, 70, 73, 90.
Pudendal sheath, 95 n. 5; 97 n. 1.

Quality of pottery no proof of date, 68 n. 1.

"Rahmenstil," see Metope-style.
Red-ware production (red polished ware, red slip ware), 11, 27 sq., 64 sqq., 75, 79, 84 n. 2; 89.
Red wash ware, 69 sqq., 75, 90, 168.
Ribbon style, 41, 17 n. 3; 18, 19, 25 sq., 59 n. 1; 117 n. 3.
Ribbed and rippled pottery, 30 sq., 42 sq., 54.

Sardinia: connections with Sicily, 133 n. 3; with Malta, 134 n. 4.
"Sauce-boat," 89, 99 n. 2; 107 n. 8; 113, 127.
Scarabs, 149 n. 5.
"Schnabelkanne," see Beak-spouted jug.
"Schnur-keramik," see "Corded ware."
Second intermediate period, 83, 153, 166.
Seals, 122 n. 2; 123 n. 4.
Spiral decoration: indivisible, 22; earliest history of, 25 n. 1; origin of, in embroidery, 27, n. 1; origin of, in metalwork, 116, 140 n. 2; Butmir as first southernmost limit of, 32 n. 4; at Vinça, 46; in Macedonia, 47, 171; in the Cyclades, 49 sq.; in Crete, 116 sq., 172 n. 3; on Middle Helladic wares, 140; in China, 180; in Apulia, 129; in Malta, 134; in Sicily, 134; in Egypt, 151; and rectilinear designs, 19 n. 4; 26 n. 10; static and rhythmic, 26, 117, n. 3; 139; S-spiral, 17 n. 3; 47 n. 4; disintegration of, 117, 139, 172; impossibility to synchronize first appearance of, 32 n. 4; 50 n. 1; 119, 140.

Spanish influence in Eastern Mediterranean, 106 n. 9; 135 n. 5; 152.
Side-spouted jugs, 86, 87 n. 1; 177.
Silver, 87, 142.
Subneolithic period: in Crete, see Crete; in Greece, 112.
Syria: copper, 7, 149 sq.; early pottery, 74 sqq.; influence on Cyprus, 81, 82 n. 1; polychrome pottery, 83, 165; influence on Crete, 92, 122; homeland of concentric circles, motive, 82 n. 1; 123, 159, 163 sqq.; influence on Egyptian ceramics, 167; Syria and Anatolia, 169 sq., 186.

Tankard, 115, 118, 132, 138 n. 1; 172 n. 6.
Tectonic style, 19, 21 sq., 57.
Terra-mare, 51 sqq.
Thessaly: mixed population in, 14; highly specialized pottery types in, 13 sq.; red monochrome ware developed out of black ware, 11, 59; incised ware, 39 n. 3; copper in, 41; Danubian remains in, 44 n. 3; 45, 47 n. 5; Northern invasion, 36 sq.; American parallels for designs, 2 n. 1; Italian parallels for designs, 126 sqq., 133.
Theriomorph vases, 58, 103 n. 1; 167, 184.
Thrace: earliest layer in Danubia, 32 sq.; incised ware, 39; uniformity of remains, 40 n. 3.
Tin, 135 n. 5; 147 n. 1.
Tripolje culture: of dolichocephalic people, 4 n. 3; dwelling-places in, 15 n. 3; chronology of, 18 n. 1; incised ware, 23 n. 1; copper, 34 n. 10; 148 sq.; common elements with Danubian civilization 25, n. 1; Danubian influence in western part of, 29; contact with Asia, 34 n. 10; 189; realistic tendency in vase-painting, 4 n. 1; 23 n. 1; importance for Greece of, 41 sq., 52 sq.

"Umlaufstil," see Free-field style.
"Urfirnis" ware, 88, 90, 108 n. 2; 111 sqq., 113 n. 2; 130, 137, 156.

"Vassiliki" ware, see Crete.

"Wavy-handled" jars, 73 sq.
Weapons: doubtful dating evidence, 106 n. 9; Asiatic types in Central Europe, 140.
"Weissmalerei," see White-painted wares.
White-painted wares, 17 n. 3; 28, 31, 62, 112 n. 2; 118.
Wishbone handles, 43, 47 n. 5; 48, 50, 51 n. 2; 55, 172.

II.—SITES.

Abusir el Melek, 77, 102, 167.
Abydos, 74 sq., 77, 149, 151, 191.
Adalia, 57, 66.
Ægina, 12 sqq., 138 nn. 2, 5; 139 n. 6; 44 n. 1.
Aivatli, 32 sq.
Ak Hissar, 57 sq.
Amorgos, 50 n. 1; 87 nn. 5, 7; 88 n. 1; 89, 105 sqq., 119.
Anau, 1 sqq., 157, 163, 187.
Andros, 50.
Antiparos, 87 nn. 5, 7; 105 sqq.
Argissa, 39 n. 3.
Argos, 13, 139 n. 6.
Arkalochori, 86 n. 5; 88, 117 n. 1.
Askalon, 82 n. 6; 165 n. 4.
Assur, 83, 120, 165.
Astrabad, 150.
Athens, 127, 128 n. 1.

Badari, 54, 84 n. 2.
Barriera, 132 n. 8.
Besika Tepeh, 62.
Bey bazar, 57 n. 3; 66, 70.
Boghazkeui, 57 n. 3; 70, 98 n. 3; 155 sqq.
Bonat, 70.
Borodina, 175 n. 2.
Bos Euyuk, 57 sq., 66 sq., 70, 71 sq.
Bournarbashi Giöl, 7 n. 2.
Broos, 47 n. 3.
Bulghaz Ma'aden, 57 n. 3.
Butmir, 3, n. 2; 26 sq., 31 sqq., 34 sq., 49 sq., 59 n. 1; 116 sq., 130, 140.
Byblos, 75 n. 6; 77 n. 3; 122 n. 2; 149 n. 5; 152, 164.

Castellucio, 134.
Černavoda, 15 n. 2; 19 sqq., 32, 40 n. 3.
Chaeronea, 2, 11 sqq., 38 n. 4; 42, 44 n. 1; 128, 191 sqq.
Chalkis, 52, 113, 121, 144, 151.
Chamaizi, 98 n. 3.
Corinth, 11 sqq., 44, 48, 86 n. 3; 111, 114, 119, 121, 126 sq., 133, 144, 190 sq.
Cucuteni, 16, 18 sqq., 34 sq., 38 n. 1; 41 n. 1; 149.

Denew, 51 n. 1.
Dhimini, 11, 33 n. 5 ; 36 sqq., 40, 43, 191.
Dikilitash, 36, 41.
Drachmani, 12 sq., 32 n. 7 ; 42 sqq., 144 n. 1.
Drousanadha, 44 n. 3.
Duino, 26 n. 3.

Eleusis, 12 sqq.
Emed, 62.
Érösd, 16, 18 sqq., 29 n. 1 ; 31, 34, 38 n. 1 ; 181.
Euboea, 49 sq., 87 n. 7 ; 109, 121, 131 n. 4 ; 144 n. 1.

Fara, 184, 186.
Fugla, 165.

Gerzeh, 8, 77.
Gezer, 72 sqq., 82 n. 1.
Gök Tepeh, 189.
Gomonitsh, 36, 41.
Gonia, 11 n. 6 ; 38 sq., 40, 44, 111, 119, 126 sqq., 130, 191.
Gordion, 57 n. 3 ; 158 sqq., 159 n. 3 ; 173 sq.
Gournia, 86 n. 4 ; 88 n. 1 ; 89, 95 n. 6 ; 116.
Gradac, 46, 110.

Hagia Marina, 14 sq., 42 sqq., 86 n. 3 ; 112, 121, 128, 138 with n. 6.
Hagios Onuphrios, 92, 139 n. 6.
Hissarlik, 7, 35, 36 n. 1 ; 46, 57 sqq., 63 sq., 66, 86 n. 2 ; 87 sq., 90, 99, 102, 105, 106 n. 3 ; 107, 109, 119, 131 sq., 134, 136, 142, 144 n. 1 ; 147 sq., 172, 177.

Iconium, 57 n. 3.
Ipsus, 57 n. 3.
Irini, 11.

Jama na Dolech, 31.
Jemdet Nasr, 183, 187 n. 5.
Jerusalem, 72 sq., 80.

Kafer Djerra, 82 n. 1 ; 164.
Kahun, 149, 151.
Kapoudjilar, 46.
Kara Euyuk, 57, 70, 152 n. 1 ; 155 sqq., 161.
Karagah Tepeh, 58.
Karaif Keui, 168.
Kilindir, 31 sq., 47 n. 1.
Kish, 183.
Klakar, 32 n. 9.
Knossos, 53, 74 n. 5 ; 88 n. 5 ; 93, 96, 100 n. 2 ; 125, 136, 146.
Kodjadermen, 38.
Komò, 95, 115.
Korakou, 48, 111, 126, 128, 137, 138 n. 3 ; 139 n. 6 ; 144.
Kultepeh, see Kara Euyuk.

Lengyel, 26, 32, 34, 49 n. 2 ; 132.
Leukas, 11, 42 n. 3 ; 48, 127 sqq., 133.
Lianokhladhi, 12, 30 n. 1 ; 38 n. 4 ; 43, 112, 113 n. 2 ; 121, 172.

Maikop, 147, 150.
Malkata Podlisza, 33.
Mallia, 88 n. 1 ; 136.
Marsovan, 57 n. 3.
Matera, 127 n. 6 ; 129 sq.
Matrensa, 3 n. 2 ; 191 sq.
Megara Hyblaea, 133.
Memphis, 121.
Mesiani Maghula, 11, 44 n. 3.
Midas City, 57 n. 3.
Mochlos, 86 n. 4 ; 88 nn. 1, 3 ; 90, 92, 93 n. 1 ; 95 n. 6 ; 101, 115, 116, 118.
Mohammedabad, 187.
Mohenjo Daro, 187 sq.
Molfetta, 127 n. 6 ; 129 sq.
Mondsee, 44 n. 1 ; 47 n. 3 ; 48 n. 2.
Monte Salia, 133.
Musyan, see Tepeh Musyan.
Mycenæ, 48, 86 n. 2 ; 87 n. 4 ; 102 n. 1 ; 112, 114, 121, 128, 140 n. 1.

Nal, 188.
Naxos, 49 sq., 86 nn. 1, 2 ; 87 nn. 5, 7 ; 88 nn. 1, 7 ; 89, 105 sq., 107 n. 8 ; 118 sq., 121.
Nirou Khani, 88.

Oliaros, 105.
Oltszem, 17 n. 1.
Olympia, 138.
Orchomenos, 12 sq., 42 sqq., 48, 112, 119, 121, 128, 138 n. 2 ; 151.
Orta Euyuk, 57 n. 3.

Palaikastro, 172 n. 3.
Panderma, 57 n. 2.
Paros, 87 n. 5 ; 88 n. 1 ; 105, 138 sq., 146.
Pelos, 107.
Petreni, 2 n. 1 ; 15 n. 3 ; 18 sq., 35, 38 n. 1 ; 121.
Phaestos, 54, 95, 136, 146.
Phylakopi, 86 n. 1 ; 89 n. 12 ; 105, 107, 114, 121, 124 n, 1 ; 132, 133, 136 sqq.

Platanos, 116.
Pod-Grado, 33 n. 1.
Priesterhügel, 29 n. 1; 37 n. 1; 38 n. 1; 51 n. 2; 55 n. 2; 181.
Pyrgos, 87 n. 6; 88 n. 7; 89, 114 sq., 117 n. 1; 121.

Qau el Kebir, 167 sq.

Rakhmani, 11, 45.
Rini, 44 n. 3.

Sakjegeuzi, 7, 57, 75.
Samarra, 187.
Sarilar, 86 n. 1.
Schipenitz, 22, 29 n. 1.
Sedes, 31 sq.
Sedment, 167.
Sendshirli, 167.
Senirdje, 58 n. 2; 65.
Sesklo, 33 n. 5; 36.
Sette Farina, 132 n. 8.
Sha Ching, 183, 189.
Sha Kuo T'un, 180 sqq.
Siphnos, 105.
Stentinello, 3 n. 2; 131 n. 1.
Surghul, 167 n. 2.
Susa, 7, 23 n. 1; 72, 83, 102, 103, 120, 157, 165, 183, 189.
Sveti Kyrillovo, 40 n. 3.
Syros, 49, 87 n. 7; 88 n. 1; 89, 105 sqq., 128 n. 1; 139, 144 n. 1; 145.

Tarkhan, 75 n. 6.
Tell Acharat, 75.
Tell el Amarna, 155, 165 sqq.
Tell el Obeid (see also Ur), 183 sqq., 186.
Tell en-Nasbeh, 72 n. 3.
Tell Harbaj, 76.
Tell Kaudeni, 188.
Tell Ratcheff, 40 n. 3.
Tepeh Alevi, 64 n. 4; 70.
Tepeh Digalla, 189.
Tepeh Khazineh, 185.
Tepeh Mohammed Djaffar, 189.
Tepeh Musyan, 185, 189.
Thebes, 112.
Theresienhöhle, 26 n. 3; 31.
Thermon, 48, 51 n. 2.
Thisbe, 13, 112, 114, 127.
Tirnova, 44 n. 2.
Tiryns, 11, 44 n. 1; 48, 86 n. 2; 87 n. 4; 112, 114, 121, 137 sq., 140 n. 1; 174 n. 1; 191.
Tordos, 26, 31, 44 n. 1; 47 n. 3; 48 n. 2; 59 n. 1;
Toscanella Immolese, 51 n. 2.
Troy, Troad, see Hissarlik.
Tsangli, 11 sq., 42 n. 4; 43 n. 4; 44 n. 1.
Tsani Maghula, 14 n. 2.
Tylissos, 158 n. 2.
Tzarewskaja, 150.

Ur, 150, 183.
Urmya, 189.

Vaitsimylos, 11.
Vallelunga, 132.
Vardino, 31 sq., 41 n. 3.
Vassiliki, 89, 90, 101, 116.
Vinça, 30 sqq., 34, 35 n. 1; 36 n. 1; 39 sq., 44 n. 1; 45 sq., 48, 59 n. 1; 110.

Yama na Dolech, 28.
Yortan Kelembo, 7, 57 sqq., 63 sqq., 65 n. 1; 86 n. 2; 87, 99, 102, 106 n. 7; 144 n. 1.

Zafer Papoura, 158 n. 2.
Zakro, 89.
Zerelia, 14 n. 2.
Zille, 57 n. 3.
Zokkod Pecuja, 132 n. 4.

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